



# Monroe County Employees Retirement System

## Actuarial Valuation Report

Plan Year as of December 31, 2016

July 2017

July 2017

Board of Trustees  
Monroe County Employees Retirement System  
840 South Roessler Street  
Monroe, MI 48161

### **Certification of Actuarial Valuation**

Ladies and Gentlemen:

This report summarizes the actuarial valuation results of Monroe County Employees Retirement System as of December 31, 2016 performed by Conduent HR Consulting, LLC (Conduent).

The actuarial valuation is based on unaudited financial and member data provided by the staff of the Retirement System and summarized in this report. The benefits considered were provided by staff and summarized in this report. The actuary did not verify the data submitted, but did perform tests for consistency and reasonableness.

All costs, liabilities and other factors under the Plan were determined in accordance with Actuarial Standards of Practice. An actuarial cost method is used to measure the actuarial liabilities which we believe is reasonable. Conduent is solely responsible for the actuarial data and actuarial results presented in this report. This report fully and fairly discloses the actuarial position of the Plan.

The Monroe County Employees Retirement System is funded by Employer and Member Contributions in accordance with the funding policy adopted by the Retirement Board. The funding objective for the Monroe County Employees Retirement System is to pay required contributions that remain level as a percent of Member Compensation. The Retirement Board has also established a funding policy objective that the required contributions be sufficient to pay the Normal Costs of active plan members, Plan expenses, and amortize the Unfunded Actuarial Accrued Liability over a 25-year layered amortization with 2% annual payment increases.

In our opinion, the actuarial assumptions used are reasonable, taking into account the experience of the Plan and reasonable long-term expectations, and represent our best estimate of the anticipated long-term experience under the Plan. The actuary performs an analysis of Plan experience periodically and recommends changes if, in the opinion of the actuary, assumption changes are needed to more accurately reflect expected future experience.

As required under the ordinance Section 13.4, this valuation was prepared on the basis of the interest, salary and demographic assumptions that were determined from the Experience Study for the period January 1, 2010 to December 31, 2014 prepared by Conduent and approved by the Board for use beginning with the December 31, 2014 actuarial valuation. These assumptions will remain in effect for valuation purposes until such time as the Board adopts revised assumptions based on an updated Experience Study, which is scheduled to be performed before the December 31, 2019 valuation.

The assumptions and methods used to determine the Actuarially Determined Contribution (ADC) of the Monroe County Employees Retirement System as outlined in this report and all supporting schedules meet the parameters and requirements for disclosure of Governmental Accounting Standards Board (GASB) Statement No. 67 & 68 for Financial Reporting for Pension Plans. Based on member data and asset information provided by the Executive Director and staff of the Retirement System, we have prepared the Schedule of Funding Progress and Schedule of Employer Contributions that are included in the Financial Section of the Comprehensive Annual Financial Report.

This report contains many historical schedules. Conduent began performing these valuations beginning with the December 31, 2014 Annual Actuarial Valuation. Results prior to this date were replicated from the prior actuary and are included without audit or opinion.

Use of this report for any other purpose may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. Conduent will not accept any liability for any such statement made without prior review by Conduent.

Where presented, references to "funded ratio" and "unfunded accrued liability" typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Because of limited scope, Conduent performed no analysis of the potential range of such future differences.

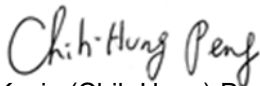
The undersigned are Enrolled Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all Applicable Actuarial Standards of Practice. We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate.

Respectfully submitted,

Conduent HR Consulting, LLC



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# Summary of Results

## Overview

The Monroe County Employees Retirement System provides pension and ancillary benefit payments to the terminated and retired employees of the Monroe County, Michigan. A Retirement Board comprised of employer, employee, and appointed representatives is responsible for administering the Plan and making investment decisions. This report presents the results of the actuarial valuation of the Plan benefits as of the valuation date of December 31, 2016.

## Purpose

An actuarial valuation is performed on the retirement plan annually as of the beginning of the fiscal year. The main purposes of the actuarial valuation detailed in this report are:

1. To determine if the Board's funding policy for the Retirement Plan is being met considering current assets and the current employer and member contribution rates; or determine the employer contribution necessary to meet the Board's funding policy for the Plan;
2. To disclose the funding assets and liability measures as of the valuation date;
3. To disclose the accounting measures for the Plan required by GASB No. 67 and No. 68 as of the end of the last fiscal year;
4. To review the current funded status of the Plan;
5. To compare actual and expected experience under the Plan during the last fiscal year;
6. And to report trends in contributions, assets, liabilities, and funded status over the last several years.

This actuarial valuation provides a "snapshot" of the funded position of the Retirement Plan based on the plan provisions, membership, assets, and actuarial assumptions as of the valuation date. Actuarial projections are also performed to provide a long-term view of the expected future funding status and contribution patterns.

## Membership

### Actives

As of December 31, 2016, there were 713 employees in active service covered under the provisions of the Plan. The significant age, service, and salary information for these employees is summarized below, along with comparative figures from the last actuarial valuation one year earlier.

	<b>December 31, 2016</b>	<b>December 31, 2015</b>
Number of active employees	713	717
Average age	45.7	45.6
Average years of service	13.5	13.3
Total annual valuation salary	\$34,786,368	\$35,914,410
Average annual salary	48,789	50,090

The number of active members decreased by 0.6% from the previous valuation date. The average age of the active members increased by 0.1 years, and the average service increased by 0.2 years. The total annual valuation salary decreased by 3.1%. The average salary decreased by 2.6% from the previous valuation. There were 672 active members who were also reported active in the December 31, 2015 actuarial valuation. The total salary for this group decreased by 1.0%, which was lower than the 4.0% increase we expected for the group.

## Summary of Results (continued)

Distributions of active members by age, service, and salary are given in Section 5.2. The salaries shown for active members are the actual annualized year salaries reported.

A schedule of active member data and reconciliation of the active membership from the previous year is shown in Sections 5.3 and 5.4.

### Inactives

In addition to the active members, there were 151 inactive vested members who did not elect to receive their accumulated contributions when they left covered employment. The significant age and annual benefit information for these inactive members are summarized below with comparative figures from the last actuarial valuation one year earlier.

	<b>December 31, 2016</b>	<b>December 31, 2015</b>
Number of inactive members	151	150
Average age	49.6	50.0
Average annual benefit payments	\$13,052	\$12,556

The number of inactive vested members increased by 0.7% from the previous valuation. The average age of the inactive vested members decreased by 0.4 years. The Average Monthly Pension Benefit for these members increased by 3.9% from the previous valuation.

Distributions of inactive members by age and pension benefit are given in Section 5.9.

### Retirees and Beneficiaries

In addition to the active and inactive members, there were 670 retired members and 82 beneficiaries who are receiving monthly benefit payments on the valuation date. The significant age and annual benefit information for these members are summarized below with comparative figures from the last actuarial valuation performed one year earlier.

	<b>December 31, 2016</b>	<b>December 31, 2015</b>
Number of members receiving payments		
➤ Retirees	670	717
➤ Beneficiaries*	82	19
➤ Total	752	736
Average age	69.0	68.6
Annual benefit amounts		
➤ Retirees	\$14,051,898	\$14,446,661
➤ Beneficiaries	\$927,028	\$238,404
➤ Total	\$14,978,926	\$14,685,065
Average annual benefit payments	\$19,919	\$19,953

\* Beneficiaries are tracked separately beginning with the December 31, 2014 valuation. For the December 31, 2016 valuation, the status for 57 individuals was changed from retired or disabled to beneficiary.



## Summary of Results (continued)

The number of retired members and beneficiaries increased by 2.2% from the previous valuation date. The average age of the retired members and beneficiaries increased by 0.4 years. The total annual benefit payments for these members increased by 2.0% from the previous valuation date.

Distributions of retired members by age and form of payment are given in Section 5.6 through 5.9.

In our opinion, the membership data collected and prepared for use in this actuarial valuation meets the data quality standards required under Actuarial Standards of Practice No. 23.

### Plan Assets

The Plan's assets are held in trust and invested for the exclusive benefit of plan members. The trust is funded by member and employer contributions, and pays benefits directly to eligible members in accordance with plan provisions. The assets are audited annually and are reported at fair value. On a fair value basis, the Plan has Net Assets Available for Benefits of \$189.0 million as of December 31, 2016. This includes an increase of \$5.6 million over the Net Assets Available for Benefits of \$183.4 million as of December 31, 2015. During the prior year, the fair value of assets experienced an investment rate of return of 6.89%.

In order to reduce the volatility investment gains and losses can have on the Plan's actuarially required contribution and funded status, the Board has adopted a seven-year smoothing method to determine the actuarial value of assets used for funding purposes. This method recognizes gains and losses, i.e. the difference between actual investment return during the year and the expected return based on the valuation interest rate, on a level basis over a seven year period. In our opinion, this method complies with Actuarial Standards of Practice No. 44.

As of December 31, 2016, the assets available for benefits on an actuarial value basis were \$202.7 million. This includes an increase of \$3.0 million over the actuarial value of assets of \$199.7 million as of December 31, 2015. During the prior year, the actuarial value of assets experienced an actuarial rate of return of 5.02%.

A summary of the assets held for investment, a summary of changes in assets, and the development of the actuarial value of assets is shown in Section 2.

### Actuarial Experience

Differences between the expected experience based on the actuarial assumptions and the actual experience create changes in the actuarial accrued liability, actuarial value of assets, and the unfunded actuarial accrued liability from one year to the next. These changes create an actuarial gain if the experience is favorable and an actuarial loss if the experience is unfavorable. The Plan experienced a total net actuarial gain of \$2.0 million during the prior year. This total net gain is about 0.7% of the plan's prior year actuarial accrued liability.

The demographic experience tracks actual changes in the plan's population compared to the assumptions for decrements such as mortality, turnover, and retirement, as well as pay increases. The Plan experienced a demographic gain of \$6.0 million during the year ending December 31, 2016. This gain decreased the unfunded actuarial accrued liability by \$6.0 million and increased the funded ratio by 1.6%. The demographic gain was due to a combination of factors including smaller than expected salary increases and an additional pay period in the preceding year, which resulted in favorable salary experience due to a reduction in the number of pay periods.

## Summary of Results (continued)

Continued tracking of the demographic experience is warranted in order to confirm the appropriateness of the actuarial assumptions. Details of the demographic, economic, and other assumptions used to value the plan liabilities and normal cost can be found in Section 6. In our opinion, the economic assumptions comply with Actuarial Standards of Practice No. 27 and the demographic assumptions comply with Actuarial Standards of Practice No. 35.

The Plan experienced a loss on an actuarial value of assets. The actual rate of return on the actuarial value of plan assets for the year ending December 31, 2016 was approximately 5.02% compared to the assumption of 7.0%, resulting in an asset loss of \$4.1 million. This loss increased the unfunded actuarial accrued liability by \$4.1 million and decreased the funded ratio by 1.5%.

The rate of return on the fair value of assets for the year ending December 31, 2016 was lower than the assumed rate of 7.0%. The actuarial value of the assets recognizes only 1/7<sup>th</sup> of the 2016 loss on fair value, delaying the recognition of the remaining 6/7<sup>ths</sup> over the next six years. Moreover, the actuarial value of assets also recognizes deferred portions of prior years' gains and losses on fair value. It should be noted that the plan's assumed asset return of 7.0% is a long-term rate and short-term performance is not necessarily indicative of expected long-term future returns.

A summary of the actuarial gains and losses experienced during the prior year is shown in Section 1.3 and Section 1.4.

### Actuarial Contributions

The Board has adopted a Funding Policy that requires contributions to be sufficient to pay the normal cost and amortize the unfunded actuarial accrued liability over a 25-year layered amortization with 2% annual payment increases.

The normal cost represents the cost of the benefits that accrue during the year for active members under the Entry Age Actuarial Cost Method. It is determined as a level percentage of pay which, if paid from entry age to the assumed retirement age, assuming all the actuarial assumptions are exactly met by plan experience would accumulate to a fund sufficient to pay all benefits provided by the Plan. The expected member contributions are subtracted from this amount to determine the employer normal cost. The employer normal cost for 2017 has been determined to be \$3.3 million, or 9.5% of pay.

The cost method also determines the actuarial accrued liability which represents the value of all accumulated past normal cost payments. This amount is compared to the actuarial value of assets to determine if the Plan is ahead or behind in funding as of the valuation date. The difference between the total actuarial accrued liability and the actuarial value of assets equals the amount of unfunded actuarial accrued liability or surplus (if negative) on the valuation date. This amount is amortized and added to the employer normal cost to determine the annual actuarially required employer contribution for the year.

The unfunded actuarial accrued liability as of December 31, 2016 is \$71.8 million. This represents a decrease of \$1.8 million in the unfunded actuarial accrued liability from last year's amount of \$73.6 million.

The annual actuarially required employer contribution for 2018 is \$9.3 million, or 26.8% of pay. This represents a decrease of \$0.3 million in the employer contribution amount of \$9.6 million for 2017, or an increase of 0.3% of pay from last year's employer contribution rate of 26.5%.

The actuarial liabilities and development of the annual actuarial employer contribution is shown in Sections 1.1 and 1.2.

In our opinion, the measurement of the benefit obligations and determination of the actuarial cost of the Plan is performed in compliance with Actuarial Standards of Practice No. 4.

### **Funded Status**

The funded status is a measure of the progress that has been made in funding the plan as of the valuation date. It is determined as a ratio of the actuarial value of assets divided by the total actuarial accrued liability on the valuation date. A ratio of over 100% represents a plan that is ahead in funding, and a ratio of less than 100% represents a plan that is behind in funding on the valuation date.

As of December 31, 2016 the funded ratio of the Plan is 73.8%. This represents an increase of 0.7% from last year's funded ratio of 73.1% as of December 31, 2015. The comments regarding funded ratios are not intended to measure the adequacy of funding in any analysis of a possible settlement of plan liabilities, nor is it intended to assess the need for, or the amount of, future contributions.

A history of the unfunded actuarial accrued liability and the funded ratio is shown in Section 1.6.

### **Accounting Information**

The Governmental Accounting Standards Board (GASB) issues statements which establish financial reporting standards for defined benefit pension plans and accounting for the pension expenditures and expenses for governmental employers. The required financial reporting information for the Plan and the Employer under GASB No. 67 and No. 68 can be found in Section 3.

### **Changes in Plan Provisions**

There have been no changes in benefits or other plan provisions considered in this actuarial valuation since the last valuation performed as of December 31, 2015, except for the following:

- For AFLCIO-County Agency, employees hired on or after December 1, 2014 have a normal retirement date at the later of the attainment of age 60 and eight years of service, and the benefit multiplier is 1.50%.
- For POAM-District Court I, the employee contribution percentage was increased to 3% effective in January 2016.
- For both AFSCME and Local 543, the benefit multiplier for employees hired on or after December 1, 2014 is 2.0%, and the final average compensation is calculated using regular wages and excluding overtime pay.

### **Changes in Actuarial Assumptions, Methods, or Procedures**

There have been no changes in the actuarial cost method, asset valuation method, or valuation procedures since the last actuarial valuation performed as of December 31, 2015.

## Comparative Summary of Key Actuarial Valuation Results

	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
<b>Summary of Member Data</b>		
Number of Members Included in the Valuation		
▪ Active Members	713	717
▪ Inactive Members	151	150
▪ Retirees and beneficiaries	<u>752</u>	<u>736</u>
▪ Total	1,616	1,603
Annual Payroll		
▪ Average (actual)	48,789	50,090
Annual Benefit Payments		
▪ Inactive Members(Average)	13,052	12,556
▪ Retirees and beneficiaries (Average)	19,919	19,953
<b>Summary of Assets</b>		
Fair Value		
▪ <i>Rate of Return</i>	6.89%	-0.60%
Actuarial Value		
▪ <i>Rate of Return</i>	5.02%	5.71%
<b>Summary of Liabilities</b>		
Total Actuarial Accrued Liability	274,544,403	273,288,937
Actuarial Value of Assets	202,718,040	199,696,082
Unfunded Actuarial Accrued Liability	71,826,363	73,592,855
Funded Ratio	73.84%	73.07%
Maturity Ratio	62.31%	61.81%

# Section 1: Actuarial Funding Results

## Section 1.1 - Actuarial Liabilities and Normal Cost

Actuarial Liabilities based on December 31, 2016 Valuation	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Totals
<b>1. Present Value of Projected Benefits</b>								
Active Members								
Retirement Benefits	36,613,149	3,970,424	33,163,566	10,778,006	13,997,894	10,592,899	2,824,509	111,940,447
Withdrawal Benefits	4,520,348	587,274	1,672,266	952,620	1,187,562	1,441,366	198,617	10,560,053
Disability Benefits	3,873,010	576,853	2,669,212	887,954	1,644,071	1,154,287	298,842	11,104,229
Death Benefits	120,149	13,865	55,209	30,371	38,869	35,533	6,971	300,967
Total	45,126,656	5,148,416	37,560,253	12,648,951	16,868,396	13,224,085	3,328,939	133,905,696
2. Inactive Members with Deferred Benefits	4,818,899	178,638	1,044,481	312,116	1,048,051	5,109,923	15,517	12,527,625
3. Retired Members and Beneficiaries Receiving Benefits	70,859,768	7,970,477	41,323,776	9,068,890	13,448,727	12,973,524	2,898,276	158,543,438
<b>4. Total Present Value of Projected Benefits (1. + 2. + 3.)</b>	<b>120,805,323</b>	<b>13,297,531</b>	<b>79,928,510</b>	<b>22,029,957</b>	<b>31,365,174</b>	<b>31,307,532</b>	<b>6,242,732</b>	<b>304,976,759</b>
5. Present Value of Future Normal Costs	9,526,032	1,026,935	9,070,372	3,201,224	3,239,669	3,086,687	1,281,437	30,432,356
<b>6. Total Actuarial Accrued Liability (4. - 5.)</b>	<b>111,279,291</b>	<b>12,270,596</b>	<b>70,858,138</b>	<b>18,828,733</b>	<b>28,125,505</b>	<b>28,220,845</b>	<b>4,961,295</b>	<b>274,544,403</b>

Normal Cost for Fiscal year Beginning January 1, 2018	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Totals
<b>1. Active Members</b>								
a. Retirement Benefits	7.13%	5.40%	10.16%	8.25%	8.25%	\$268,485	9.73%	
b. Withdrawal Benefits	2.32%	2.55%	1.21%	1.70%	1.67%	78,016	1.13%	
c. Disability Benefits	1.20%	1.37%	1.26%	0.93%	1.50%	42,472	1.42%	
d. Death Benefits	0.03%	0.03%	0.02%	0.02%	0.03%	1,044	0.03%	
e. Administrative expense	0.50%	0.50%	0.50%	0.50%	0.50%	16,906	0.50%	
<b>2. Total Normal Cost (As a % of pay)</b>	<b>11.18%</b>	<b>9.85%</b>	<b>13.15%</b>	<b>11.40%</b>	<b>11.95%</b>	<b>\$406,923</b>	<b>12.81%</b>	
<b>3. Expected Member Contribution(As a % of pay^)</b>	<b>3.00%</b>	<b>2.75%</b>	<b>3.17%</b>	<b>0.00%</b>	<b>3.23%</b>	<b>0.00%</b>	<b>3.00%</b>	
<b>4. Expected Member Contribution (Dollar amount)</b>	<b>\$368,643</b>	<b>\$39,590</b>	<b>\$271,473</b>	<b>\$0</b>	<b>\$132,443</b>	<b>\$0</b>	<b>\$31,652</b>	<b>843,801</b>
<b>5. Employer Normal Cost (As a % of pay)</b>	<b>8.18%</b>	<b>7.10%</b>	<b>9.98%</b>	<b>11.40%</b>	<b>8.72%</b>	<b>\$406,923</b>	<b>9.81%</b>	
<b>6. Employer Normal Cost (Dollar amount*)</b>	<b>\$995,622</b>	<b>\$102,077</b>	<b>\$855,213</b>	<b>\$488,602</b>	<b>\$357,578</b>	<b>\$406,923</b>	<b>\$102,956</b>	<b>3,308,971</b>

^ Salary weight average

## Section 1.2 - Actuarial Contributions

Item	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Total
1. Total Actuarial Accrued Liability								
a. Active Members								
i. Retirement Benefits	30,458,989	3,381,161	25,877,220	8,431,506	11,717,614	8,523,029	1,816,359	90,205,878
ii. Withdrawal Benefits	2,280,014	302,929	809,458	393,298	674,313	777,596	77,488	5,315,096
iii. Death Benefits	95,014	11,032	40,343	23,161	30,979	27,462	3,903	231,894
iv. Disability Benefits	2,766,607	426,359	1,762,860	599,762	1,205,821	809,311	149,752	7,720,472
v. Total	35,600,624	4,121,481	28,489,881	9,447,727	13,628,727	10,137,398	2,047,502	103,473,340
b. Inactive Members with Deferred Benefits	4,818,899	178,638	1,044,481	312,116	1,048,051	5,109,923	15,517	12,527,625
c. Retired Members and Beneficiaries Receiving Benefits	70,859,768	7,970,477	41,323,776	9,068,890	13,448,727	12,973,524	2,898,276	158,543,438
d. Total (1.a.v. + 1.b. + 1.c.)	111,279,291	12,270,596	70,858,138	18,828,733	28,125,505	28,220,845	4,961,295	274,544,403
2. Actuarial Value of Assets*	76,917,553	6,815,981	49,426,129	15,699,189	24,447,510	26,149,644	3,262,033	202,718,040
3. Unfunded Actuarial Accrued Liability (UAAL) (1.d - 2.)	34,361,738	5,454,615	21,432,009	3,129,544	3,677,995	2,071,201	1,699,262	71,826,363
4. Funded Ratio (2. / 1.d)	69.12%	55.55%	69.75%	83.38%	86.92%	92.66%	65.75%	73.84%
5. Maturity Ratio [(1.b + 1.c) / 1.d]	68.01%	66.41%	59.79%	49.82%	51.54%	64.08%	58.73%	62.31%
6. Total Contribution for fiscal 2018								
Total Normal Cost Rate	11.18%	9.85%	13.15%	11.40%	11.95%	n/a	12.81%	
Member Contribution Rate	3.00%	2.75%	3.17%	0.00%	3.23%	n/a	3.00%	
UAAL Contribution Rate**	20.13%	27.29%	17.93%	5.23%	6.42%	n/a	11.44%	
Total Contribution Rate	31.31%	37.14%	31.08%	16.63%	18.37%	n/a	24.25%	
Total Contribution Dollar	3,837,273	534,596	2,662,022	712,906	753,207	578,042	255,293	9,333,339
7. Discount rate	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	
8. Amortization payments increase assumption	2.00%	2.00%	2.00%	2.00%	2.00%	n/a	2.00%	
9. Amortization period for 2018 contribution **	25	25	25	25	25	25	25	

\* Does not include 13th Check amounts, which are passed through the ERS

\*\* Effective for the 12/31/2012 valuation, the Mental Health division is closed to new hires. A level dollar amortization is now being used.  
Effective for the 12/31/2014 valuation, Unfunded liabilities for all other divisions are amortized over a 25-year layered amortization with 2% annual payment increases.

## Section 1.3 - Actuarial (Gain) / Loss

(\$'s in 000's)

Development of Actuarial (Gain) / Loss	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Amount
1. Expected Actuarial Accrued Liability								
a. Actuarial Accrued Liability at December 31, 2015	111,118	12,229	70,391	18,137	28,746	27,580	5,088	273,289
b. Normal Cost at December 31, 2015	1,312	126	1,110	440	454	436	130	4,008
c. Interest on a. + b. to End of Year	7,870	865	5,005	1,300	2,044	1,961	365	19,410
d. Benefit Payments and Refund of Contributions with Interest to end of year	7,068	764	3,964	957	1,757	1,294	309	16,113
e. Expected Actuarial Accrued Liability (a. + b. + c. - d.)	113,232	12,456	72,542	18,920	29,487	28,683	5,274	280,594
f. Increase/(decrease) in Actuarial Accrued Liability Due to Change in Actuarial Assumptions	0	0	0	0	0	0	0	0
g. Increase/(decrease) in Actuarial Accrued Liability Due to Change in Plan Provisions	0	(3)	0	0	(1)	0	0	(4)
2. Actuarial Accrued Liability at December 31, 2016	111,279	12,271	70,858	18,829	28,126	28,221	4,961	274,545
<b>3. Liability (Gain) / Loss (2. - 1.e.)</b>	<b>(1,953)</b>	<b>(185)</b>	<b>(1,684)</b>	<b>(91)</b>	<b>(1,361)</b>	<b>(462)</b>	<b>(313)</b>	<b>(6,049)</b>
4. Expected Actuarial Value of Assets								
a. Actuarial Value of Assets at December 31, 2015	76,483	6,718	48,409	15,361	23,947	25,596	3,182	199,696
b. Interest on a. to End of Year	5,354	470	3,389	1,075	1,676	1,792	223	13,979
c. Contributions Made	3,568	510	2,490	514	1,033	557	223	8,895
d. Interest on c. to End of Year	125	18	87	18	36	19	8	311
e. Benefit Payments and Refund of Contributions with Interest to end of year	7,068	764	3,964	957	1,757	1,294	309	16,113
f. Expected Actuarial Value of Assets at December 31, 2016 (a. + b. + c. + d. - e.)	78,462	6,952	50,411	16,011	24,935	26,670	3,327	206,768
5. Actuarial Value of Assets as of December 31, 2016*	76,918	6,816	49,425	15,699	24,448	26,150	3,262	202,718
<b>6. Actuarial Asset (Gain) / Loss (4.g. - 5.)</b>	<b><u>1,544</u></b>	<b><u>136</u></b>	<b><u>986</u></b>	<b><u>312</u></b>	<b><u>487</u></b>	<b><u>520</u></b>	<b><u>65</u></b>	<b><u>4,050</u></b>
<b>7. Actuarial (Gain) / Loss (3. + 6.)</b>	<b>(409)</b>	<b>(49)</b>	<b>(698)</b>	<b>221</b>	<b>(874)</b>	<b>58</b>	<b>(248)</b>	<b>(1,999)</b>

\* Does not include 13th Check amounts, which are passed through the ERS



## Section 1.4 - Analysis of Financial Experience

### Analysis of Financial Experience

#### Analysis of Actuarial (Gains) and Losses

#### Resulting From Differences Between Assumed Experience and Actual Experience

(\$'s in 000's)

Type of (Gain) or Loss	Year Ending December 31, 2016	As a % of Last Year's AAL
(1) COLA Experience	9	0.00%
(2) Salary Experience	(5,902)	-2.16%
(3) Investment Experience	4,050	1.48%
(4) Retirement Experience	(90)	-0.03%
(5) Turnover Experience	15	0.01%
(6) Deaths among actives Experience	52	0.02%
(7) Disability retirements Experience	(50)	-0.02%
(8) Change in service accrual rate	(100)	-0.04%
(9) Inactive mortality Experience	(305)	-0.11%
(10) Return to work	0	0.00%
(11) New Entrants	7	0.00%
(12) Contribution Shortfall	0	0.00%
(13) Other	317	0.12%
(14) (Gain) or Loss During Year From Experience,	(1,995)	-0.73%
(15) Assumption Changes	0	0.00%
(16) Plan Changes	(4)	0.00%
(17) Total (Gain) or Loss During Year	(1,999)	-0.73%

## Section 1.5 - Actuarial Balance Sheet

Financial Resources	December 31, 2016
1. Actuarial Value of Assets*	202,718,040
2. Present Value of Future Contributions	
(a) Expected Member contributions	6,603,784
(b) Employer Normal Cost	23,828,572
(c) State Appropriations	0
(d) Total	30,432,356
3. Unfunded Actuarial Accrued Liability/(Reserve)	71,826,363
4. Total Assets [1 + 2(d) + 3]	304,976,759

Benefit Obligations	December 31, 2016
1. Present Value of Future Benefits	
(a) Active members	133,905,696
(b) Inactive members	12,527,625
(c) Retirees, disabilities and beneficiaries	158,543,438
(d) Total	304,976,759

\* Does not include 13th Check amounts, which are passed through the ERS

## Section 1.6 - History of UAAL and Funded Ratio

(\$'s in 000's)

Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio (AVA as a % of AAL)	Covered Payroll	UAAL as a Percentage of Covered Payroll
	(a)	(b)	(b-a)	(a/b)	(c)	(b-a)/( c )
December 31, 2006	169,284	174,001	4,717	97.3%	41,821	11.3%
December 31, 2007 *	181,320	186,841	5,521	97.0%	43,152	12.8%
December 31, 2008	184,968	199,861	14,893	92.5%	43,962	33.9%
December 31, 2009 *#	188,779	211,333	22,554	89.3%	42,894	52.6%
December 31, 2010	192,859	231,681	38,822	83.2%	38,418	101.1%
December 31, 2011	192,014	240,886	48,872	79.7%	38,892	125.7%
December 31, 2012	193,740	244,371	50,631	79.3%	37,588	134.7%
December 31, 2013	195,509	255,180	59,671	76.6%	36,065	165.5%
December 31, 2014 #	195,100	262,415	67,315	74.3%	34,912	192.8%
December 31, 2015	199,696	273,289	73,593	73.1%	35,914	204.9%
December 31, 2016 *	202,718	274,544	71,826	73.8%	34,786	206.5%

\*The Retirement System provisions were amended.

# Reflects a change in valuation assumptions.

## Section 1.7 - Solvency Test

Valuation Date	Aggregate Accrued Liability For:			Valuation Assets	Portion of Accrued Liabilities Covered by Assets		
	(1)	(2)	(3) Active Members (Employer- Financed Portion)		(1)	(2)	(3)
	Active Member Contributions	Inactive Members					
December 31, 2006	329	81,937	91,735	169,284	100.00%	100.00%	94.86%
December 31, 2007	358	89,052	97,431	181,320	100.00%	100.00%	94.33%
December 31, 2008	218	92,358	107,285	184,968	100.00%	100.00%	86.12%
December 31, 2009	196	107,910	103,227	188,779	100.00%	100.00%	78.15%
December 31, 2010	184	140,914	90,583	192,859	100.00%	100.00%	57.14%
December 31, 2011	663	145,172	95,051	192,014	100.00%	100.00%	48.58%
December 31, 2012	770	147,070	96,531	193,740	100.00%	100.00%	47.55%
December 31, 2013	732	153,870	100,578	195,509	100.00%	100.00%	40.67%
December 31, 2014	774	162,401	99,240	195,100	100.00%	100.00%	32.17%
December 31, 2015	898	168,911	103,480	199,696	100.00%	100.00%	28.88%
December 31, 2016	851	171,071	102,622	202,718	100.00%	100.00%	30.01%

## Section 1.8 – Schedule of Amortization Bases

General County   County Agency   Sheriff's Office   County Library   Road Commission   Mental Health   Central Dispatch

### Remaining Balances

<b>Date Established</b>	<b>Remaining Period</b>							
12/31/2014	23	32,559,118	5,192,623	19,845,946	1,988,600	4,754,112	1,014,112	1,515,512
12/31/2015	24	2,095,901	325,847	2,209,320	883,127	94,961	969,713	408,806
12/31/2016	25	(464,542)	(86,784)	(831,485)	258,213	(1,266,271)	30,229	(259,097)
<b>Totals</b>		<b>34,190,477</b>	<b>5,431,686</b>	<b>21,223,781</b>	<b>3,129,940</b>	<b>3,582,802</b>	<b>2,014,054</b>	<b>1,665,221</b>

### Amortization Payments

<b>Date Established</b>								
12/31/2014		2,279,811	363,591	1,389,626	139,243	332,886	84,081	106,117
12/31/2015		143,416	22,297	151,177	60,430	6,498	79,017	27,973
12/31/2016		(31,112)	(5,812)	(55,688)	17,294	(84,807)	2,424	(17,353)
<b>Totals</b>		<b>2,392,115</b>	<b>380,076</b>	<b>1,485,115</b>	<b>216,967</b>	<b>254,577</b>	<b>165,522</b>	<b>116,737</b>

NOTE: The amortization bases listed here sum to the projected unfunded actuarial liability as of January 1, 2018.

## **Section 2: Plan Assets**

## Section 2.1 - Summary of Fair Value of Assets

Asset Category	Fair Value as of Dec. 31, 2016		Fair Value as of Dec. 31, 2015	
	Amount	%	Amount	%
<b>1. Cash and Short-Term Investments</b>				
a. Cash and cash equivalents	14,810,262	7.45%	4,464,886	2.45%
b. Other short-term	0	0.00%	0	0.00%
c. Total	14,810,262	7.45%	4,464,886	2.45%
<b>2. Investments at Fair Value</b>				
a. U.S. Treasury and agencies	11,458,756	5.77%	10,146,972	5.56%
b. Fixed Income	18,396,523	9.26%	12,817,450	7.02%
c. Domestic Stocks and Equity	125,067,548	62.94%	131,832,844	72.20%
d. International Equity	0	0.00%	0	0.00%
e. Real Estate	17,431,977	8.77%	11,989,080	6.57%
f. Hedge Funds	11,558,375	5.82%	11,340,062	6.21%
g. Total	183,913,179	92.56%	178,126,408	97.56%
<b>3. Other Assets</b>	0	0.00%	0	0.00%
<b>4. Total Assets (1.c + 2.g + 3.)</b>	198,723,441	100.00%	182,591,294	100.00%
<b>5. Receivables</b>				
a. Interest and Dividends	278,881		168,816	
b. Investments Sold	0		0	
c. Other Receivables	378,037		915,154	
d. Total	656,918		1,083,970	
<b>6. Payables</b>				
a. Payable for Investments Purchased	10,147,132		0	
b. Securities Lending Obligation in Excess of Collateral	0		0	
c. Accounts Payable and Accrued Liabilities	222,295		233,048	
d. Total	10,369,427		233,048	
<b>7. Net Assets for Pension Benefits [4. + 5.d – 6.d.]</b>	<b>189,010,932</b>		<b>183,442,216</b>	

## Section 2.2 - Changes in Fair Value of Assets

Transactions	December 31, 2016	December 31, 2015
<b>Additions</b>		
<b>1. Contributions</b>		
a. Contributions from Employers	8,044,525	7,938,585
b. Contributions from Plan Members	851,150	897,930
c. Total	8,895,675	8,836,515
<b>2. Net Investment Income</b>		
a. Interest and Dividends	3,594,435	3,160,995
b. Net Appreciation(Depreciation)	9,630,128	(3,470,745)
c. Rental Income	0	0
d. Net Securities Lending Income	0	0
e. Securities Lending Unrealized Gain/(Loss)	0	0
f. Miscellaneous	0	0
g. Total	13,224,563	(309,750)
h. Investment Expense	(815,113)	(823,265)
i. Net Investment Income	12,409,450	(1,133,015)
<b>3. Total Additions</b>	<b>21,305,125</b>	<b>7,703,500</b>
<b>Deductions</b>		
<b>4. Benefits and Expenses</b>		
a. Retirement Benefits	15,094,283	14,597,298
b. Refund of Contributions	472,721	484,034
c. Death	0	0
d. Supplemental Payment	0	0
e. Administrative Expenses	169,405	233,746
<b>5. Total Deductions</b>	<b>15,736,409</b>	<b>15,315,078</b>
<b>6. Net Increase</b>	<b>5,568,716</b>	<b>(7,611,578)</b>
<b>7. Net Assets Held in Trust for Pension Benefits</b>		
a. Beginning of Year	183,442,216	191,053,794
b. End of Year	189,010,932	183,442,216



## Section 2.3 - Actuarial Value of Assets

Development of Actuarial Value of Assets	Amount
1. Actuarial Value of Assets as of December 31, 2015	199,696,082
2. Unrecognized Return as of December 31, 2015	(16,253,866)
3. Fair Value of Assets as of December 31,2015(1. + 2.)	183,442,216
4. Contributions	
(a) Member (includes purchased service)	851,150
(b) Employer	8,044,525
(c) State appropriations	0
(d) Total	8,895,675
5. Distributions	
(a) Benefit payments	15,094,283
(b) Refund of contributions	472,721
(c) Administrative Expenses	169,405
(d) Total	15,736,409
6. Expected Return at 7.00% on	
(a) Item 1	13,978,726
(b) Item 4 (d)	311,349
(c) Item 5 (d)	550,774
(d) Total [(a) + (b) - (c)]	13,739,301
7. Actual Return on Fair Value for Fiscal year	12,409,450
8. Return to be Spread for Fiscal year (7. – 6.d)	(1,329,851)
9. Total Fair Value of Assets as of December 31, 2016	189,010,932
10. Return to be Spread	

Fiscal Year	Return to be Spread	Unrecognized Percent	Unrecognized Return
2016	(1,329,851)	86%	(1,139,872)
2015	(14,571,648)	71%	(10,408,320)
2014	(5,596,234)	57%	(3,197,848)
2013	7,122,977	43%	3,052,704
2012	1,377,360	29%	393,531
2011	(16,851,119)	14%	(2,407,303)
		<b>Total</b>	<b>(13,707,108)</b>

11. Primary Actuarial Value of Assets (9. – 10.)	202,718,040
12. Corridor	
(a) Lower Limit: 80%* 9.	151,208,746
(b) Upper Limit: 120%* 9.	226,813,118
(c) Adjustment to 11. to fit Limits"	0
13. Actuarial Value of Assets (11. + 12.c.)	<b>202,718,040</b>
14. Recognized Rate of Return for the Year on Actuarial Value of Assets*	<b>5.02%</b>
15. Rate of Return for the Year on Market Value of Assets (2x7./[3.+9.-7.])	<b>6.89%</b>

\*The rate of return is based on the change in the actuarial value of assets from last year to this year.  
The rate of return is calculated assuming contributions and disbursements occur halfway through the year.

## Section 2.3 - Actuarial Value of Assets (continued)

### Allocation of Retirement Systems Assets

	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Total
(1) Valuation assets at start of year	76,483,062	6,718,128	48,409,261	15,361,041	23,946,686	25,596,310	3,181,594	199,696,082
(2) Employee contributions	361,543	39,373	283,680	-	131,670	-	34,884	851,150
(3) Employer contributions	3,206,940	470,164	2,206,800	514,300	901,140	556,609	188,572	8,044,525
(4) Benefits paid	6,781,004	737,147	3,658,682	924,370	1,464,571	1,230,323	298,187	15,094,283
(5) Refund of contributions	47,773	543	171,693	-	233,184	19,470	56	472,721
(6) Administrative expense	64,882	5,699	41,066	13,031	20,314	21,714	2,699	169,405
Allocated on BOT asset value								
(7) Average valuation assets $[(1)+0.5*((2)+(3)-(4)-(5)-(6))]$	74,820,474	6,601,202	47,718,780	15,149,490	23,604,056	25,238,861	3,142,851	196,275,714
(8) Investment income Allocated on average valuation assets	3,759,667	331,705	2,397,829	761,249	1,186,084	1,268,232	157,926	9,862,692
(9) Transfer in	-	-	-	-	-	-	-	-
Transfer out	-	-	-	-	-	-	-	-
Net transfer of assets	-	-	-	-	-	-	-	-
<b>(10) Valuation assets at end of year*</b> $[(1)+(2)+(3)-(4)-(5)-(6)+(8)+(9)]$	<b>76,917,553</b>	<b>6,815,981</b>	<b>49,426,129</b>	<b>15,699,189</b>	<b>24,447,510</b>	<b>26,149,644</b>	<b>3,262,033</b>	<b>202,718,040</b>
(11) Total Revenues $[(2)+(3)+(8)]$	7,328,150	841,243	4,888,309	1,275,549	2,218,894	1,824,841	381,382	18,758,367
Percentage of revenue attributable to:								
Employee contributions	4.9%	4.7%	5.8%	0.0%	5.9%	0.0%	9.1%	4.5%
Employer contributions	43.8%	55.9%	45.1%	40.3%	40.6%	30.5%	49.4%	42.9%
Investment income	51.2%	39.4%	49.2%	59.7%	53.5%	69.5%	41.4%	52.6%
(12) Total Expenditures $[(4)+(5)+(6)]$	6,893,659	743,389	3,871,441	937,401	1,718,070	1,271,507	300,943	15,736,409
Percentage of expenditures attributable to:								
Benefits paid	98.4%	99.2%	94.5%	98.6%	85.2%	96.8%	99.1%	95.9%
Refund of contributions	0.7%	0.1%	4.4%	0.0%	13.6%	1.5%	0.0%	3.0%
Administrative expenses	0.9%	0.8%	1.1%	1.4%	1.2%	1.7%	0.9%	1.1%

\*Does not include 13th Check amounts, which are passed through the ERS

## Section 2.4 - Historical Asset Rate of Return

Year Ending December 31	Actuarial Value Annual Recognized Rate of Return	Fair Value Annual Market Rate of Return
2006	6.34%	11.36%
2007	9.24%	7.80%
2008	3.74%	-19.30%
2009	4.46%	14.47%
2010	4.71%	9.65%
2011	3.48%	-2.07%
2012	3.59%	8.97%
2013	4.14%	11.89%
2014	3.19%	4.22%
2015	5.71%	-0.60%
2016	5.02%	6.89%

## Section 2.5 - Forecast of Expected Benefit Payments

Year Ending December 31	Active Employees	Retired Members, Disabled Members and Beneficiaries	Grand Total
2017	350	14,972	15,322
2018	947	14,898	15,845
2019	1,600	14,759	16,359
2020	2,394	14,631	17,025
2021	3,286	14,505	17,791
2022	4,245	14,332	18,577
2023	5,226	14,239	19,465
2024	6,269	14,036	20,305
2025	7,423	13,835	21,258
2026	8,594	13,559	22,153
2027	9,678	13,320	22,998
2028	10,625	13,108	23,733
2029	11,554	12,851	24,405
2030	12,539	12,550	25,089
2031	13,370	12,245	25,615
2032	14,159	11,955	26,114
2033	14,974	11,629	26,603
2034	15,792	11,275	27,067
2035	16,626	10,918	27,544
2036	17,195	10,530	27,725
2037	17,678	10,192	27,870
2038	18,133	9,773	27,906
2039	18,456	9,328	27,784
2040	18,810	8,872	27,682
2041	18,970	8,419	27,389
2042	19,120	7,936	27,056
2043	19,197	7,464	26,661
2044	19,162	6,996	26,158
2045	19,105	6,517	25,622
2046	18,926	6,044	24,970
2047	18,711	5,580	24,291

\*Forecast based on the present employees without assumption about replacement employees.

# Section 3: Accounting Information

## Section 3.1 - Notes to Trend Data

### Actuarial Assumptions, Methods and Additional Information for Funding

Valuation Date:	12/31/2016
Actuarial Cost Method	Entry Age
Amortization Method:	Level percent of payroll, closed *
Remaining amortization period	25 **
Asset valuation method	7-year adjusted market value
Actuarial assumptions:	
-Investment Rate of Return	7.00%
-Amortization payments increase assumption	2.00%
-Payroll Increases	3.5%-5.5% Vary by Employee Group
-Inflation Assumption	3.00%

\*Effective for the 12/31/2012 valuation, the Mental Health division is closed to new hires.

A level dollar amortization is being used.

\*\*At the September 21, 2015 Board meeting, the Board adopted a 25-year layered amortization with 2% annual payment increases. Future unanticipated unfunded actuarial accrued liability will be amortized over a 25 year period from the point incurred, resulting in a schedule of UAAL payments.

### Actuarial Assumptions, Methods and Additional Information for GASB No. 67 & 68

The total pension liability as of December 31, 2016 was determined by rolling forward the total pension liability as of December 31, 2015 to December 31, 2016 using the following actuarial methods and assumptions, applied to all periods included in the measurement. For all other assumptions such as mortality table, retirement rates, termination rates, and disability rates used to determine the total pension liability, please refer to the December 31, 2015 actuarial valuation report for more information.

Valuation Date:	12/31/2015
Actuarial Cost Method	Entry Age
Amortization Method:	For pension expense, the differences between expected and actual liability experience and changes of assumptions are amortized over the the average of the expected remaining service lives of all members. The difference between projected and actual earnings is amortized over a closed period of five years.
Asset valuation method	Market Value
Actuarial assumptions:	
-Investment Rate of Return	7.00%
-Payroll Increases	3.5%-5.5% Vary by Employee Group
-Inflation Assumption	3.00%
-GASB67 discount rate	7.00%

## Section 3.2 - Schedule of Changes in Net Pension Liability

### The GASB Statement No. 67 Changes in Net Pension Liability

Schedule of Changes In Net Pension Liability	Fiscal Year ending Dec. 31, 2016	Fiscal Year ending Dec. 31, 2015
<b>Total pension liability</b>		
Service Cost	\$ 4,007,459	\$ 3,901,674
Interest	18,590,127	18,114,296
Plan changes	-	-
Differences between expected and actual experience	4,215,420	(1,665,060)
Changes of assumptions	-	4,100,832
Benefit payments, including refunds of member contributions	<u>(15,567,004)</u>	<u>(15,081,332)</u>
Net change in total pension liability	11,246,002	9,370,410
Total pension liability - beginning	<u>269,349,289</u>	<u>259,978,879</u>
Total pension liability - ending (a)	<u>\$ 280,595,291</u>	<u>\$ 269,349,289</u>
<b>Plan fiduciary net position</b>		
Contributions - employer	\$ 8,044,525	\$ 7,938,586
Contributions - member*	851,150	897,929
Net investment income	12,409,450	(1,133,015)
Benefit payments, including refunds of member contributions	(15,567,004)	(15,081,332)
Administrative expense	(169,405)	(233,746)
Other	<u>-</u>	<u>-</u>
Net change in plan fiduciary net position	5,568,716	(7,611,578)
Plan fiduciary net position - beginning	<u>183,442,216</u>	<u>191,053,794</u>
Plan fiduciary net position - ending (b)	<u>\$ 189,010,932</u>	<u>\$ 183,442,216</u>
Net pension liability (asset) - ending (a)-(b)	\$ 91,584,359	\$ 85,907,073

\* Include Time purchase

## Section 3.3 - Net Pension Liability (Asset)

### The GASB Statement No. 67 Net Pension Liability

Net pension liability (asset)	Dec. 31, 2016	Dec. 31, 2015
Total pension liability	\$ 280,595,291	\$ 269,349,289
Plan fiduciary net position	<u>189,010,932</u>	<u>183,442,216</u>
Net pension liability (asset)	<u>\$ 91,584,359</u>	<u>\$ 85,907,073</u>
Plan fiduciary net position as a percentage of the total pension liability	67.36%	68.11%
Covered employee payroll	\$ 34,786,368	\$ 35,914,410
Net pension liability (asset) as a percentage of covered employee payroll	263.28%	239.20%



### Section 3.4 - Sensitivity

**The GASB Statement No. 67 Sensitivity of Net Pension Liability**

Sensitivity of the Net Pension Liability to Changes in Discount Rates at Dec. 31, 2016		Current	
	1% Decrease	Discount Rate	1 % increase
Discount rate	6.00%	7.00%	8.00%
Total pension liability	\$ 315,202,581	\$ 280,595,291	\$ 251,667,911
Plan fiduciary net position	<u>189,010,932</u>	<u>189,010,932</u>	<u>189,010,932</u>
Net pension liability (asset)	\$ 126,191,649	\$ 91,584,359	\$ 62,656,979

## Section 3.5 - Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

Under GASB 68, employers participating in the Plan would recognize a total pension expense of \$ 14,734,579 for the 2017 fiscal year.

Item	Measurement Year Ending Dec. 31, 2016	Measurement Year Ending Dec. 31, 2015
<b>Pension Expense</b>		
Employer's fiscal year ending in	<u>2017</u>	<u>2016</u>
Service Cost	\$ 4,007,459	\$ 3,901,674
Interest Cost on Total Pension Liability	18,590,127	18,114,296
Projected Earnings On Plan Investments	(12,601,529)	(13,147,016)
Contributions - Member	(851,150)	(897,929)
Administrative Expense	169,405	233,746
Current period		
Plan changes	-	-
Changes of Assumptions	-	905,261
Differences between expected and actual liab. experience	951,563	(367,563)
Difference between projected and actual earnings	38,416	2,856,007
Recognition of prior years'		
Deferred outflows	4,797,851	1,036,583
Deferred inflows	(367,563)	-
Other changes in fiduciary net position	-	-
<b>Total Pension Expense</b>	<b>\$ 14,734,579</b>	<b>\$ 12,635,059</b>

At December 31, 2016, Monroe County ERS reported deferred outflows of resources and deferred inflows of resources related to pensions.

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 3,263,857	\$ (929,934)
Changes of assumptions	2,290,310	0
Net difference between projected and actual earnings on pension plan investments	<u>10,794,842</u>	<u>0</u>
<b>Total</b>	<b>\$ 16,349,009</b>	<b>\$ (929,934)</b>

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year ended December 31	
2016	\$ 5,420,267
2017	5,420,267
2018	5,420,263
2019	4,130,962
2020	447,583
Thereafter	0

## Section 3.6 – Employer Proportion of GASB Items as of December 31, 2016

All items determined under GASB 68 are allocated to employers as a pro rata share of employer contributions, as follows:

Employer	Total Employer Contribution	Ratio of Employer Contribution over Total Contribution
<b>General County</b>	3,206,940	39.86%
<b>County Agency</b>	470,164	5.84%
<b>Sheriff's Office</b>	2,206,800	27.43%
<b>County Library</b>	514,300	6.39%
<b>Road Commission</b>	901,140	11.20%
<b>Mental Health</b>	556,609	6.92%
<b>Central Dispatch</b>	188,572	2.34%
<b>TOTAL</b>	<b>8,044,525</b>	<b>100.00%</b>

## Section 3.7 – Employers’ Allocation of Pension Amounts as of December 31, 2016

Employer Name	Deferred Outflows of Resources								Deferred Inflows of Resources					Pension Expense Recognized				
	Net Pension Liability	Employer Proportion	Difference Between Expected and Actual Experience	Changes in Assumptions	Changes in Benefits	Difference Between Projected and Actual Investment Earnings		Changes in Proportionate Share of Contributions	Total Deferred Outflows	Difference Between Expected and Actual Experience	Changes in Assumptions	Changes in Benefits	Difference Between Projected and Actual Investment Earnings		Total Deferred Inflows	Proportionate Share of Pension Plan Expense	Net Amortization of Deferred Amounts from Changes in Proportionate Share of Contributions and Proportionate	
						Investment Earnings	Proportionate Share of Contributions						Investment Earnings	Proportionate Share of Contributions			Share of Contributions	Total
General County	36,509,992	39.9%	1,301,133	913,029	-	4,303,350	1,992,354	8,509,867	370,717	-	-	-	-	370,717	5,873,922	584,614	6,458,536	
County Agency	5,352,668	5.8%	190,757	133,858	-	630,907	262,691	1,218,212	54,350	-	-	-	-	54,350	861,166	81,176	942,342	
Sheriff's Office	25,123,716	27.4%	895,352	628,285	-	2,961,276	466,472	4,951,385	255,102	-	-	-	1,228,139	1,483,242	4,042,037	(192,941)	3,849,096	
County Library	5,855,142	6.4%	208,664	146,423	-	690,132	213,368	1,258,587	59,452	-	-	-	152,561	212,014	942,006	9,759	951,766	
Road Commission	10,259,192	11.2%	365,614	256,558	-	1,209,228	-	1,831,400	104,170	-	-	-	865,985	970,155	1,650,553	(271,379)	1,379,174	
Mental Health	6,336,816	6.9%	225,830	158,469	-	746,906	-	1,131,205	64,343	-	-	-	778,741	843,084	1,019,501	(238,667)	780,834	
Central Dispatch	2,146,832	2.3%	76,508	53,687	-	253,042	90,541	473,779	21,799	-	-	-	-	21,799	345,394	27,437	372,831	
<b>Total</b>	<b>91,584,359</b>	<b>100.0%</b>	<b>3,263,857</b>	<b>2,290,310</b>	<b>-</b>	<b>10,794,842</b>	<b>3,025,426</b>	<b>19,374,435</b>	<b>929,934</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3,025,426</b>	<b>3,955,360</b>	<b>14,734,579</b>	<b>0</b>	<b>14,734,579</b>	

## Section 3.8 - Supporting Exhibits

The discount rate used to measure the total pension liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that System contributions will continue to follow the current funding policy. Based on those assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. The cross over analysis produces a single rate of 7.00 percent, which reflects the long-term expected rate of return on ERS investments. Therefore, the discount rate was applied to all periods of projected benefit payments to determine the total pension liability. In the event of benefit payments not covered by the Plan's fiduciary net position, a municipal bond rate of 3.71 percent would have been used to discount the benefit payments not covered by the Plan's fiduciary net position. The 3.71 percent rate equals the S&P Municipal Bond 20-Year High Grade Rate Index (yield to maturity) at Dec. 31, 2016. Please see following two tables for additional detail.

## Section 3.8 – Supporting Exhibits (continued)

### Table 1- Projection of Fiduciary Net Position

Fiscal Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f)=(a)+(b)-(c)-(d)+( e)
2016	183,442,216	8,895,675	15,567,004	169,405	12,409,450	189,010,932
2017	189,010,932	9,857,069	16,040,334	174,487	13,008,244	195,661,424
2018	195,661,424	10,489,536	16,551,291	179,722	13,477,848	202,897,794
2019	202,897,794	10,825,955	17,253,784	185,114	13,971,393	210,256,244
2020	210,256,244	11,082,723	18,054,337	190,667	14,467,257	217,561,221
2021	217,561,221	11,126,561	18,882,871	196,387	14,950,941	224,559,465
2022	224,559,465	11,184,718	19,800,842	202,279	15,410,518	231,151,579
2023	231,151,579	11,354,562	20,680,269	208,347	15,846,919	237,464,444
2024	237,464,444	11,463,811	21,694,874	214,597	16,256,913	243,275,697
2025	243,275,697	11,405,573	22,657,150	221,035	16,627,757	248,430,843
2026	248,430,843	11,293,331	23,564,552	227,666	16,952,698	252,884,653
2027	252,884,653	11,176,713	24,332,366	234,496	17,233,271	256,727,776
2028	256,727,776	11,048,734	25,024,989	241,531	17,473,322	259,983,312
2029	259,983,312	10,926,939	25,759,302	248,777	17,670,992	262,573,164
2030	262,573,164	10,793,107	26,340,921	256,240	17,826,980	264,596,091
2031	264,596,091	10,634,984	26,905,810	263,927	17,943,010	266,004,348
2032	266,004,348	10,483,284	27,477,817	271,845	18,015,981	266,753,951
2033	266,753,951	10,309,226	27,964,560	280,000	18,045,040	266,863,657
2034	266,863,657	10,115,879	28,459,301	288,400	18,028,342	266,260,177
2035	266,260,177	9,908,589	28,628,003	297,052	17,972,636	265,216,347
2036	265,216,347	9,678,170	28,758,249	305,964	17,886,633	263,716,937
2037	263,716,937	9,433,692	28,794,333	315,143	17,771,533	261,812,686
2038	261,812,686	9,112,004	28,661,682	324,597	17,631,288	259,569,699
2039	259,569,699	8,711,008	28,575,444	334,335	17,462,922	256,833,850
2040	256,833,850	8,165,457	28,252,822	344,365	17,263,259	253,665,380
2041	253,665,380	7,327,490	27,882,510	354,696	17,024,737	249,780,400
2042	249,780,400	5,948,940	27,449,096	365,337	16,719,336	244,634,243
2043	244,634,243	2,426,883	26,894,876	376,297	16,254,847	236,044,801
2044	236,044,801	1,553,150	26,299,516	387,586	15,643,448	226,554,296
2045	226,554,296	1,529,158	25,606,840	399,214	15,002,109	217,079,509
2046	217,079,509	1,503,751	24,874,284	411,190	14,363,205	207,660,990
2047	207,660,990	1,481,617	24,238,555	423,526	13,724,953	198,205,480
2048	198,205,480	1,464,023	23,429,095	436,232	13,090,338	188,894,513
2049	188,894,513	1,446,158	22,610,105	449,319	12,466,152	179,747,400
2050	179,747,400	1,426,308	21,817,238	462,799	11,852,437	170,746,108
2051	170,746,108	1,422,197	21,010,219	476,683	11,249,963	161,931,367
2052	161,931,367	1,414,450	20,142,078	490,983	10,662,544	153,375,300
2053	153,375,300	1,403,977	19,238,314	505,712	10,094,369	145,129,619
2054	145,129,619	1,400,102	18,351,107	520,883	9,547,557	137,205,288
2055	137,205,288	1,400,231	17,453,488	536,509	9,023,728	129,639,250
2056	129,639,250	1,396,332	16,548,352	552,604	8,525,086	122,459,712
2057	122,459,712	1,389,603	15,644,412	569,182	8,053,340	115,689,061
2058	115,689,061	1,385,209	14,745,958	586,257	7,610,089	109,352,144
2059	109,352,144	1,380,906	13,861,032	603,845	7,196,711	103,464,883
2060	103,464,883	1,377,104	12,993,688	621,960	6,814,193	98,040,532
2061	98,040,532	1,374,004	12,145,896	640,619	6,463,399	93,091,420
2062	93,091,420	1,371,065	11,321,132	659,838	6,145,053	88,626,568
2063	88,626,568	1,368,142	10,521,086	679,633	5,859,720	84,653,712
2064	84,653,712	1,366,247	9,748,586	700,022	5,607,877	81,179,228
2065	81,179,228	1,363,098	9,005,831	721,023	5,389,814	78,205,285

## Section 3.8 – Supporting Exhibits (continued)

### Table 1- Projection of Fiduciary Net Position (continued)

<b>Fiscal</b>	<b>Projected Beginning Fiduciary Net Position</b>	<b>Projected Total Contributions</b>	<b>Projected Benefit payments</b>	<b>Projected Adminstrative Expenses</b>	<b>Projected Investment Earnings</b>	<b>Projected Ending Fiduciary Net Position</b>
2066	78,205,285	1,359,634	8,292,914	742,654	5,205,712	75,735,063
2067	75,735,063	1,357,005	7,611,465	764,934	5,055,776	73,771,445
2068	73,771,445	1,355,111	6,962,579	787,882	4,940,164	72,316,259
2069	72,316,259	1,354,732	6,347,028	811,518	4,859,005	71,371,450
2070	71,371,450	1,354,768	5,765,205	835,864	4,812,381	70,937,530
2071	70,937,530	1,356,529	5,217,321	860,940	4,800,367	71,016,166
2072	71,016,166	1,356,930	4,703,467	886,768	4,822,966	71,605,827
2073	71,605,827	1,357,334	4,223,514	913,371	4,880,124	72,706,400
2074	72,706,400	1,357,625	3,777,165	940,772	4,971,837	74,317,924
2075	74,317,924	1,357,300	3,363,843	968,995	5,098,111	76,440,497

There is no crossover point in this analysis.

After 2070, the projected investment earnings will exceed the projected benefit payments and administrative expenses.

## Section 3.8 – Supporting Exhibits (continued)

### Table 2- Actuarial Present Values of Projected Benefit Payments

Fiscal Year	Period (a)	Projected Beginning Fiduciary Net Position (b)	Projected Benefit Payments (c)	Projected Benefit Payments		Present Value of Benefit Payments		
				"Funded" Portion (d)	"UnFunded" Portion (e)	Funded Portion at 7.00%* (f)= (d)/(1+i)^(a)	Unfunded Portion at 3.71% (g)= (e)/(1+3.71%)^(a)	Using a Single Discount Rate of 7.0% (h)=(c)/(1+7.%)^(a)
2016	1	183,442,216	15,567,004	15,567,004	0	14,548,602	0	14,548,602
2017	2	189,010,932	16,040,334	16,040,334	0	14,010,249	0	14,010,249
2018	3	195,661,424	16,551,291	16,551,291	0	13,510,784	0	13,510,784
2019	4	202,897,794	17,253,784	17,253,784	0	13,162,829	0	13,162,829
2020	5	210,256,244	18,054,337	18,054,337	0	12,872,492	0	12,872,492
2021	6	217,561,221	18,882,871	18,882,871	0	12,582,454	0	12,582,454
2022	7	224,559,465	19,800,842	19,800,842	0	12,330,969	0	12,330,969
2023	8	231,151,579	20,680,269	20,680,269	0	12,036,105	0	12,036,105
2024	9	237,464,444	21,694,874	21,694,874	0	11,800,574	0	11,800,574
2025	10	243,275,697	22,657,150	22,657,150	0	11,517,746	0	11,517,746
2026	11	248,430,843	23,564,552	23,564,552	0	11,195,349	0	11,195,349
2027	12	252,884,653	24,332,366	24,332,366	0	10,803,861	0	10,803,861
2028	13	256,727,776	25,024,989	25,024,989	0	10,384,481	0	10,384,481
2029	14	259,983,312	25,759,302	25,759,302	0	9,989,901	0	9,989,901
2030	15	262,573,164	26,340,921	26,340,921	0	9,547,162	0	9,547,162
2031	16	264,596,091	26,905,810	26,905,810	0	9,113,929	0	9,113,929
2032	17	266,004,348	27,477,817	27,477,817	0	8,698,773	0	8,698,773
2033	18	266,753,951	27,964,560	27,964,560	0	8,273,704	0	8,273,704
2034	19	266,863,657	28,459,301	28,459,301	0	7,869,234	0	7,869,234
2035	20	266,260,177	28,628,003	28,628,003	0	7,398,020	0	7,398,020
2036	21	265,216,347	28,758,249	28,758,249	0	6,945,493	0	6,945,493
2037	22	263,716,937	28,794,333	28,794,333	0	6,499,260	0	6,499,260
2038	23	261,812,686	28,661,682	28,661,682	0	6,046,093	0	6,046,093
2039	24	259,569,699	28,575,444	28,575,444	0	5,633,552	0	5,633,552
2040	25	256,833,850	28,252,822	28,252,822	0	5,205,559	0	5,205,559
2041	26	253,665,380	27,882,510	27,882,510	0	4,801,243	0	4,801,243
2042	27	249,780,400	27,449,096	27,449,096	0	4,417,393	0	4,417,393
2043	28	244,634,243	26,894,876	26,894,876	0	4,045,049	0	4,045,049
2044	29	236,044,801	26,299,516	26,299,516	0	3,696,734	0	3,696,734
2045	30	226,554,296	25,606,840	25,606,840	0	3,363,897	0	3,363,897
2046	31	217,079,509	24,874,284	24,874,284	0	3,053,891	0	3,053,891
2047	32	207,660,990	24,238,555	24,238,555	0	2,781,159	0	2,781,159
2048	33	198,205,480	23,429,095	23,429,095	0	2,512,412	0	2,512,412
2049	34	188,894,513	22,610,105	22,610,105	0	2,265,970	0	2,265,970
2050	35	179,747,400	21,817,238	21,817,238	0	2,043,467	0	2,043,467
2051	36	170,746,108	21,010,219	21,010,219	0	1,839,139	0	1,839,139
2052	37	161,931,367	20,142,078	20,142,078	0	1,647,800	0	1,647,800
2053	38	153,375,300	19,238,314	19,238,314	0	1,470,901	0	1,470,901
2054	39	145,129,619	18,351,107	18,351,107	0	1,311,278	0	1,311,278
2055	40	137,205,288	17,453,488	17,453,488	0	1,165,551	0	1,165,551
2056	41	129,639,250	16,548,352	16,548,352	0	1,032,809	0	1,032,809
2057	42	122,459,712	15,644,412	15,644,412	0	912,516	0	912,516
2058	43	115,689,061	14,745,958	14,745,958	0	803,842	0	803,842
2059	44	109,352,144	13,861,032	13,861,032	0	706,170	0	706,170
2060	45	103,464,883	12,993,688	12,993,688	0	618,675	0	618,675
2061	46	98,040,532	12,145,896	12,145,896	0	540,475	0	540,475
2062	47	93,091,420	11,321,132	11,321,132	0	470,817	0	470,817
2063	48	88,626,568	10,521,086	10,521,086	0	408,921	0	408,921
2064	49	84,653,712	9,748,586	9,748,586	0	354,109	0	354,109
2065	50	81,179,228	9,005,831	9,005,831	0	305,728	0	305,728



## Section 3.8 – Supporting Exhibits (continued)

### Table 2- Actuarial Present Values of Projected Benefit Payments (continued)

Fiscal Year	Period (a)	Projected Beginning Fiduciary Net Position (b)	Projected Benefit Payments (c)	Projected Benefit Payments		Present Value of Benefit Payments		
				"Funded" Portion (d)	"UnFunded" Portion (e)	Funded Portion at 7.00%* (f)= (d)/(1+i)^a	Unfunded Portion at 3.71% (g)= (e)/(1+3.71%)^a	Using a Single Discount Rate of 7.0% (h)=(c)/(1+7.%)^a
2066	51	78,205,285	8,292,914	8,292,914	0	263,108	0	263,108
2067	52	75,735,063	7,611,465	7,611,465	0	225,690	0	225,690
2068	53	73,771,445	6,962,579	6,962,579	0	192,943	0	192,943
2069	54	72,316,259	6,347,028	6,347,028	0	164,379	0	164,379
2070	55	71,371,450	5,765,205	5,765,205	0	139,543	0	139,543
2071	56	70,937,530	5,217,321	5,217,321	0	118,020	0	118,020
2072	57	71,016,166	4,703,467	4,703,467	0	99,436	0	99,436
2073	58	71,605,827	4,223,514	4,223,514	0	83,448	0	83,448
2074	59	72,706,400	3,777,165	3,777,165	0	69,747	0	69,747
2075	60	74,317,924	3,363,843	3,363,843	0	58,051	0	58,051

There is no crossover point in this analysis.

After 2070, the projected investment earnings will exceed the projected benefit payments and administrative expenses.

# Section 4: Actuarial Funding Projections

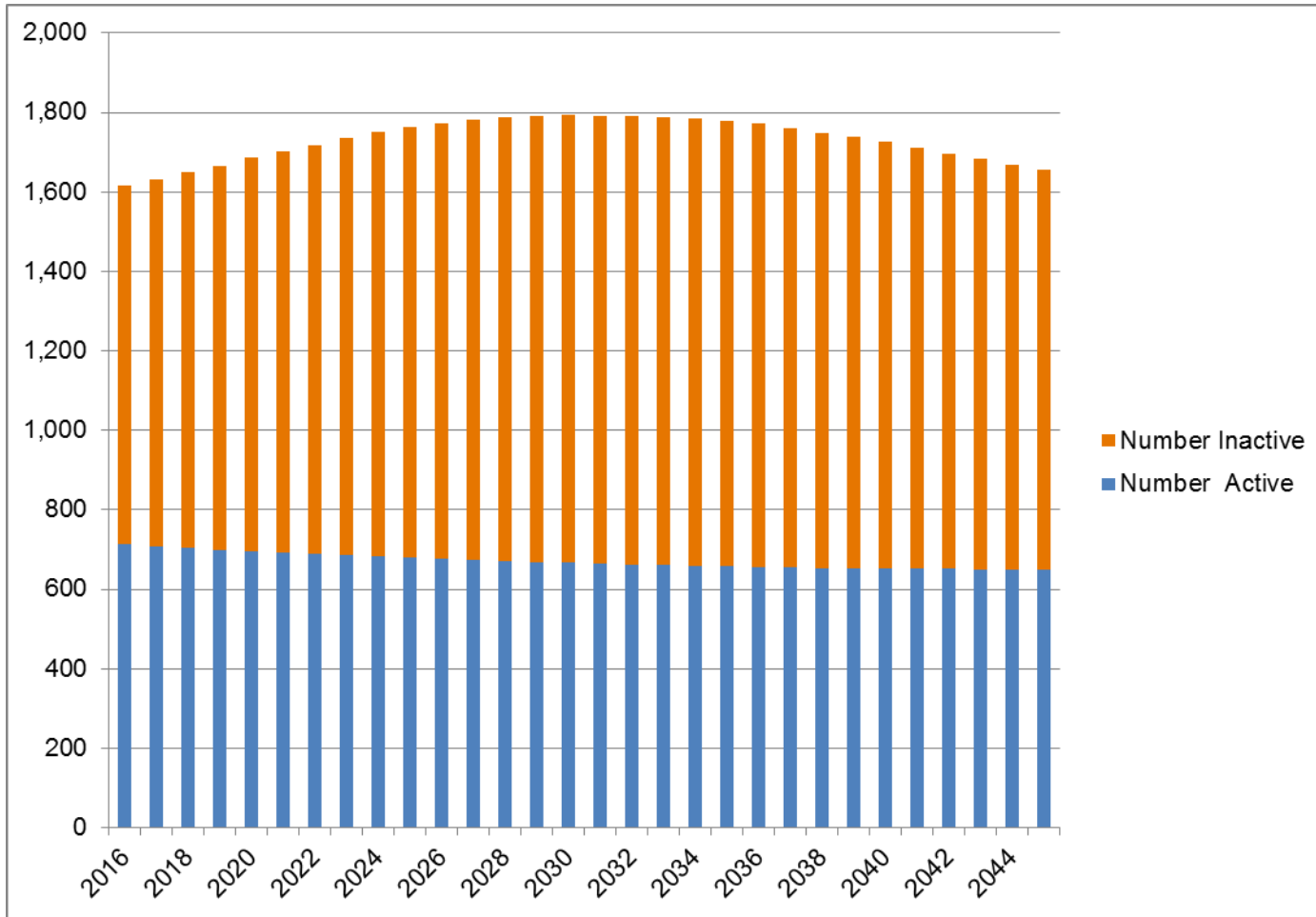
## Section 4.1 - Projection Assumptions and Methods

### Actuarial Assumptions

- 7.0% investment return on the Fair Value of Assets in all future years.
- Prospectively, asset valuation method smoothing recognizes the excess of actual over expected returns as opposed to unrealized returns.
- Actuarial assumptions and methods as described in Section 6. All future demographic experience is assumed to be exactly realized.
- The actuarially calculated contribution rate is contributed each year.
- Projections assume a 0% increase in the total active member population. All future new active members are expected to enter the plan upon date of hire and contribution rates are determined as a percent of total payroll.
- The Mental Health division is closed to new entrants.
- Unfunded actuarial accrued liability is amortized over a 25-year layered amortization with 2% annual payment increases.

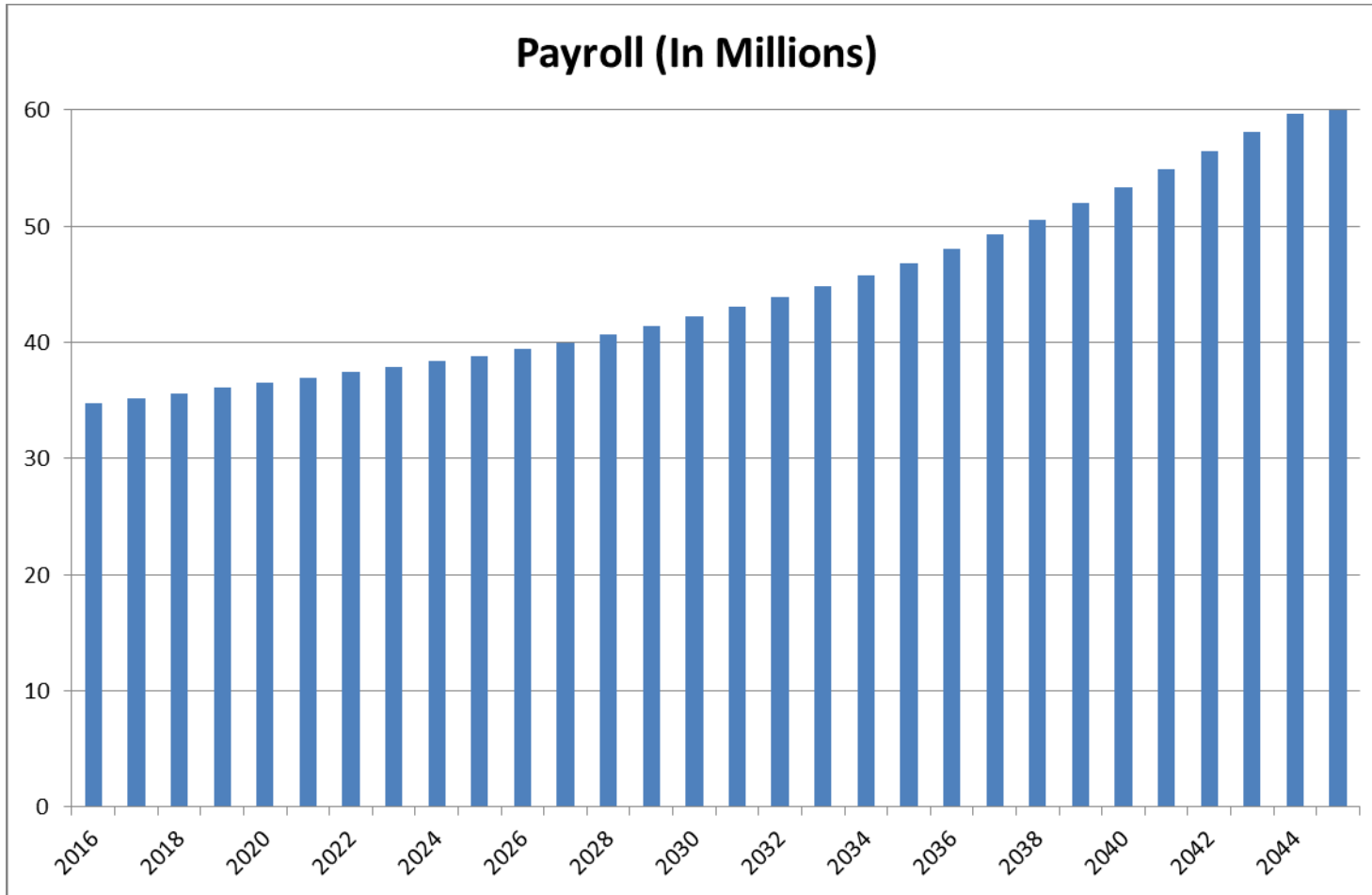
## Section 4.2 - Membership Projection

Projected Member Count

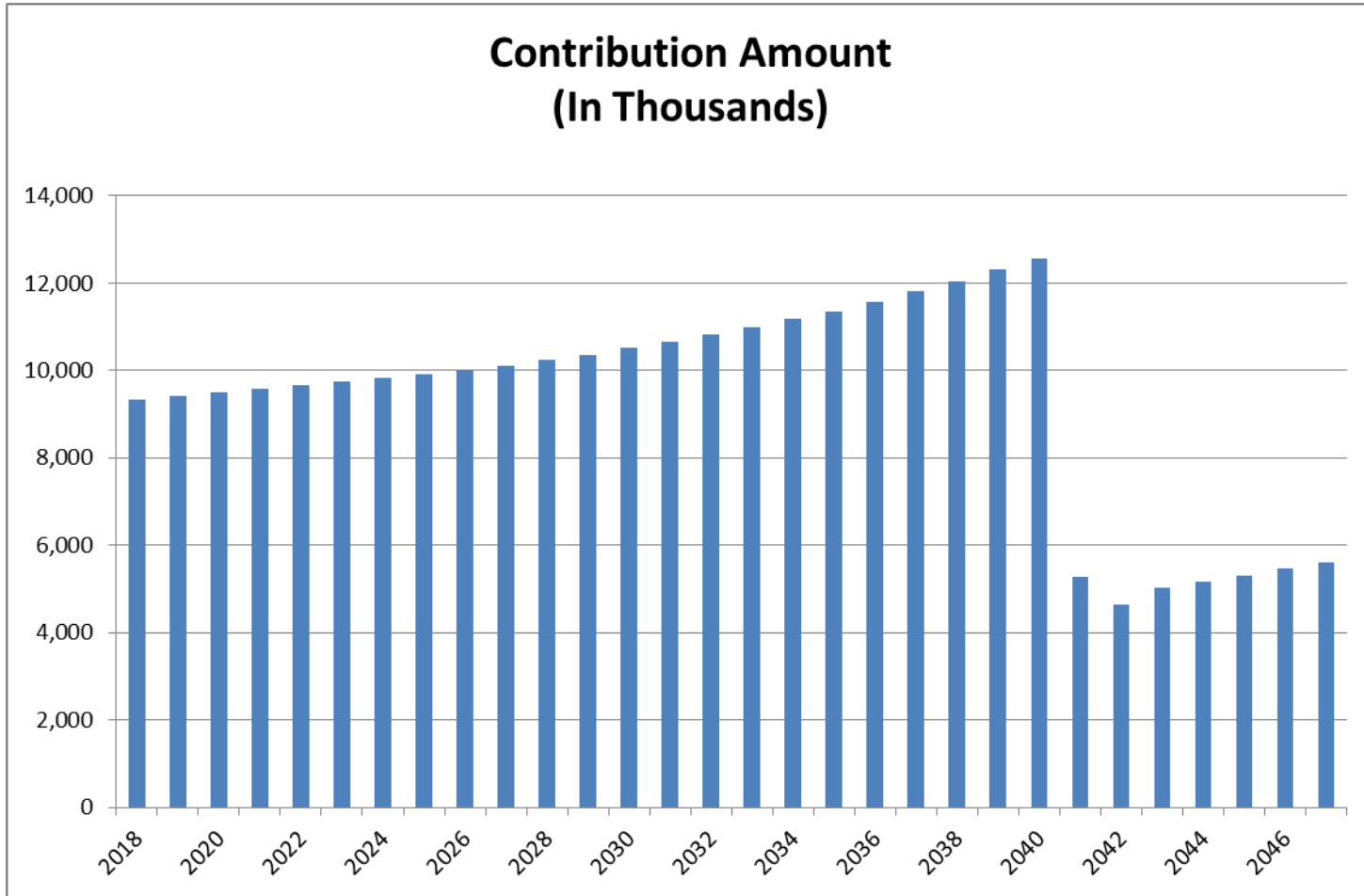


## Section 4.2 - Membership Projection (cont'd)

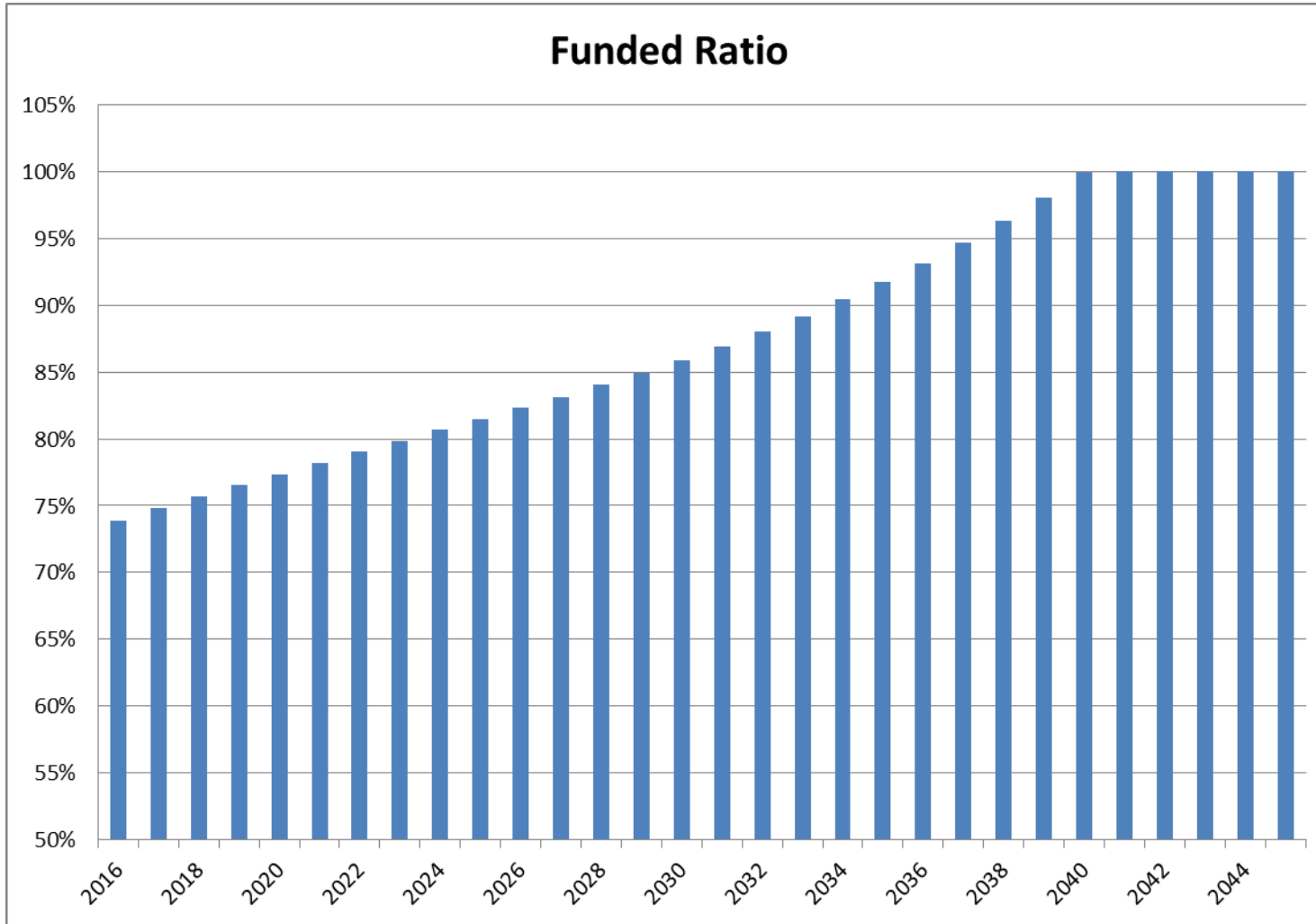
### Projected Current and New Member Payroll



### Section 4.3 - Projection of Employer Contribution Amounts



## Section 4.4 – Projection of Funded Status



## Section 4.5 - Table of Projected Actuarial Results (\$'s in 000's)

Valuation Amounts on December 31											Amounts For Fiscal Year			
Year	Actuarial Asset	Accrued Liability								Funded Ratio	Surplus (Deficit)	Year	Total Contribs *	Benefit Payment
		General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Total					
2016	202,718	111,279	12,271	70,858	18,829	28,126	28,221	4,961	274,544	73.84%	(71,826)	2018	9,333	15,322
2017	211,640	113,603	12,521	73,424	19,623	29,269	29,246	5,193	282,878	74.82%	(71,238)	2019	9,416	15,846
2018	220,406	115,869	12,826	76,098	20,398	30,434	30,198	5,446	291,269	75.67%	(70,863)	2020	9,488	16,360
2019	229,353	118,093	13,147	78,873	21,143	31,616	31,122	5,719	299,711	76.52%	(70,358)	2021	9,574	17,026
2020	238,327	120,256	13,461	81,685	21,848	32,794	31,988	6,006	308,038	77.37%	(69,711)	2022	9,653	17,791
2021	247,239	122,352	13,749	84,493	22,518	33,988	32,740	6,311	316,151	78.20%	(68,912)	2023	9,741	18,578
2022	256,058	124,362	14,022	87,233	23,155	35,173	33,423	6,637	324,004	79.03%	(67,946)	2024	9,820	19,466
2023	264,680	126,222	14,280	89,889	23,770	36,290	34,046	6,984	331,481	79.85%	(66,801)	2025	9,910	20,306
2024	273,131	127,930	14,528	92,465	24,370	37,324	34,623	7,352	338,592	80.67%	(65,461)	2026	9,999	21,260
2025	281,292	129,476	14,759	94,914	24,953	38,252	35,113	7,734	345,203	81.49%	(63,910)	2027	10,107	22,165
2026	289,193	130,878	14,981	97,219	25,521	39,092	35,543	8,091	351,326	82.31%	(62,132)	2028	10,236	23,023
2027	296,885	132,203	15,209	99,363	26,076	39,840	35,853	8,450	356,993	83.16%	(60,108)	2029	10,366	23,770
2028	304,491	133,411	15,451	101,360	26,638	40,544	36,093	8,813	362,310	84.04%	(57,818)	2030	10,506	24,457
2029	312,072	134,589	15,701	103,205	27,198	41,222	36,214	9,185	367,314	84.96%	(55,242)	2031	10,666	25,157
2030	319,623	135,700	15,958	104,909	27,752	41,851	36,243	9,566	371,979	85.92%	(52,356)	2032	10,825	25,702
2031	327,323	136,868	16,234	106,502	28,327	42,448	36,127	9,953	376,460	86.95%	(49,137)	2033	10,989	26,225
2032	335,208	138,112	16,513	107,970	28,939	42,994	35,895	10,343	380,766	88.04%	(45,558)	2034	11,168	26,742
2033	343,301	139,410	16,801	109,350	29,584	43,511	35,546	10,690	384,893	89.19%	(41,592)	2035	11,353	27,238
2034	351,653	140,726	17,085	110,616	30,266	44,005	35,124	11,040	388,862	90.43%	(37,209)	2036	11,573	27,752
2035	360,273	142,089	17,372	111,774	31,003	44,445	34,614	11,352	392,649	91.75%	(32,376)	2037	11,804	27,975
2036	369,518	143,565	17,682	112,916	31,818	44,899	34,015	11,684	396,579	93.18%	(27,060)	2038	12,049	28,170
2037	379,476	145,188	17,989	114,074	32,711	45,398	33,308	12,033	400,700	94.70%	(21,224)	2039	12,307	28,264
2038	390,316	146,946	18,323	115,299	33,677	45,963	32,521	12,416	405,144	96.34%	(14,828)	2040	12,564	28,232
2039	402,247	148,914	18,674	116,658	34,729	46,594	31,678	12,830	410,078	98.09%	(7,831)	2041	5,263	28,242
2040	415,301	151,093	19,056	118,133	35,882	47,334	30,737	13,252	415,487	99.96%	(186)	2042	4,633	28,095
2041	421,896	153,557	19,474	119,781	37,149	48,201	29,735	13,697	421,594	100.07%	302	2043	5,036	27,937
2042	428,499	156,362	19,936	121,638	38,487	49,213	28,646	14,179	428,460	100.01%	39	2044	5,171	27,760
2043	436,202	159,532	20,421	123,699	39,909	50,368	27,534	14,697	436,159	100.01%	43	2045	5,307	27,523
2044	444,864	163,119	20,947	125,995	41,407	51,696	26,403	15,251	444,817	100.01%	47	2046	5,457	27,300
2045	454,541	167,179	21,510	128,520	42,981	53,214	25,249	15,837	454,490	100.01%	51	2047	5,611	27,000

Note: Forecast based on the employee group as of December 31, 2016 with assumption about replacement employees.

\* A breakdown of contributions can be found on Section 4.6



## Section 4.6 - Table of Projection of Total Contribution Amounts

Valuation as of Dec. 31	Contribution for Fiscal Year*	General County	County Agency	Sheriff's Office	County Library	Road Commission	Central Dispatch	Mental Health	Total Contribution
2016	2018	3,837,000	535,000	2,662,000	713,000	753,000	255,000	578,000	9,333,000
2017	2019	3,875,000	547,000	2,699,000	713,000	761,000	260,000	561,000	9,416,000
2018	2020	3,909,000	557,000	2,731,000	717,000	768,000	266,000	540,000	9,488,000
2019	2021	3,954,000	569,000	2,760,000	726,000	777,000	271,000	517,000	9,574,000
2020	2022	3,997,000	581,000	2,776,000	734,000	790,000	277,000	498,000	9,653,000
2021	2023	4,044,000	593,000	2,803,000	743,000	796,000	283,000	479,000	9,741,000
2022	2024	4,089,000	605,000	2,822,000	754,000	799,000	288,000	463,000	9,820,000
2023	2025	4,139,000	618,000	2,839,000	766,000	812,000	293,000	443,000	9,910,000
2024	2026	4,194,000	632,000	2,856,000	778,000	823,000	290,000	426,000	9,999,000
2025	2027	4,257,000	646,000	2,874,000	792,000	833,000	295,000	410,000	10,107,000
2026	2028	4,326,000	662,000	2,901,000	808,000	850,000	299,000	390,000	10,236,000
2027	2029	4,401,000	677,000	2,924,000	824,000	864,000	304,000	372,000	10,366,000
2028	2030	4,480,000	694,000	2,952,000	842,000	876,000	308,000	354,000	10,506,000
2029	2031	4,568,000	712,000	2,987,000	862,000	891,000	312,000	334,000	10,666,000
2030	2032	4,657,000	729,000	3,021,000	884,000	903,000	316,000	315,000	10,825,000
2031	2033	4,749,000	747,000	3,064,000	906,000	917,000	310,000	296,000	10,989,000
2032	2034	4,845,000	764,000	3,101,000	929,000	930,000	317,000	282,000	11,168,000
2033	2035	4,942,000	780,000	3,148,000	954,000	946,000	315,000	268,000	11,353,000
2034	2036	5,047,000	797,000	3,205,000	980,000	964,000	325,000	255,000	11,573,000
2035	2037	5,155,000	815,000	3,268,000	1,007,000	986,000	332,000	241,000	11,804,000
2036	2038	5,271,000	832,000	3,332,000	1,036,000	1,009,000	341,000	228,000	12,049,000
2037	2039	5,387,000	850,000	3,403,000	1,066,000	1,032,000	349,000	220,000	12,307,000
2038	2040	5,505,000	868,000	3,474,000	1,095,000	1,058,000	354,000	210,000	12,564,000
2039	2041	1,913,000	294,000	1,290,000	901,000	558,000	192,000	115,000	5,263,000
2040	2042	1,724,000	265,000	1,082,000	826,000	556,000	153,000	27,000	4,633,000
2041	2043	1,823,000	279,000	1,200,000	823,000	706,000	186,000	19,000	5,036,000
2042	2044	1,873,000	287,000	1,231,000	848,000	726,000	191,000	15,000	5,171,000
2043	2045	1,927,000	294,000	1,260,000	873,000	747,000	195,000	11,000	5,307,000
2044	2046	1,982,000	302,000	1,294,000	900,000	770,000	201,000	8,000	5,457,000
2045	2047	2,037,000	310,000	1,330,000	927,000	793,000	208,000	6,000	5,611,000

\* Contribution amounts listed are to be paid during the fiscal year ended December 31

## **Section 5: Member Data**

## Section 5.1 - Summary of Members Included

As of December 31	Summary of Members Included															
	General County		County Agency		Sheriff's Office		County Library		Road Commission		Mental Health		Central Dispatch		Total	
	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015
<b>Active Members</b>																
(1) Number	275	280	29	28	143	145	104	102	77	74	63	67	22	21	713	717
(2) Average Age	46.8	46.8	41.1	41.9	40.6	40.5	49.1	48.8	47.9	48.1	48.6	48.1	39.2	38.8	45.7	45.6
(3) Average Credited Service	13.4	12.9	14.2	14.9	14.1	13.9	10.7	10.1	16.6	17.7	15.1	14.3	8.8	9.2	13.5	13.3
(4) Average Annual Earnings	44,205	44,845	47,998	46,858	58,680	61,519	40,554	39,893	52,448	54,870	56,707	59,121	46,280	49,287	48,789	50,090
<b>Retirees, Disableds and Beneficiaries</b>																
(1) Number	363	353	29	29	129	128	52	50	77	80	90	84	12	12	752	736
(2) Average Age	69.7	69.2	67.4	66.4	64.9	64.7	72.1	71.5	73.9	73.7	67.3	66.8	63.5	62.5	69.0	68.6
(3) Average Monthly Pension Benefit	1,559	1,574	2,062	2,099	2,359	2,301	1,461	1,452	1,500	1,485	1,158	1,178	1,878	1,878	1,660	1,663
<b>Vested Terminations (vested at time of termination, not refunded contributions or commenced benefit)</b>																
(1) Number	60	62	4	1	11	10	7	8	10	9	58	59	1	1	151	150
(2) Average Age	50.5	54.5	39.1	38.6	45.4	44.0	51.2	51.3	50.9	50.9	50.2	49.7	29.5	28.5	49.6	50.0
(3) Average Monthly Pension Benefit	1,062	1,070	1,264	1,083	1,558	1,528	564	677	1,381	1,303	1,028	953	932	932	1,088	1,046
<b>Total Number of Members</b>	<b>698</b>	<b>695</b>	<b>62</b>	<b>58</b>	<b>283</b>	<b>283</b>	<b>163</b>	<b>160</b>	<b>164</b>	<b>163</b>	<b>211</b>	<b>210</b>	<b>35</b>	<b>34</b>	<b>1616</b>	<b>1603</b>

## Section 5.2 - Age and Service Distribution of Active Members as of December 31, 2016

### Total

Attained Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	2	0	0	0	0	0	0	0	2
	Total Salary	59,855	0	0	0	0	0	0	0	59,855
	Average Salary	29,928	0	0	0	0	0	0	0	29,928
20-24	Number	33	2	0	0	0	0	0	0	35
	Total Salary	1,169,280	62,888	0	0	0	0	0	0	1,232,168
	Average Salary	35,433	31,444	0	0	0	0	0	0	35,205
25-29	Number	30	10	1	0	0	0	0	0	41
	Total Salary	1,034,961	397,067	33,927	0	0	0	0	0	1,465,955
	Average Salary	34,499	39,707	33,927	0	0	0	0	0	35,755
30-34	Number	20	15	16	0	0	0	0	0	51
	Total Salary	804,073	661,987	803,618	0	0	0	0	0	2,269,678
	Average Salary	40,204	44,132	50,226	0	0	0	0	0	44,503
35-39	Number	15	15	32	21	1	0	0	0	84
	Total Salary	572,159	697,988	1,850,564	1,085,048	42,992	0	0	0	4,248,751
	Average Salary	38,144	46,533	57,830	51,669	42,992	0	0	0	50,580
40-44	Number	16	16	17	37	20	1	0	0	107
	Total Salary	598,670	772,978	925,526	2,087,532	1,138,663	91,520	0	0	5,614,889
	Average Salary	37,417	48,311	54,443	56,420	56,933	91,520	0	0	52,476
45-49	Number	13	13	13	21	31	14	1	0	106
	Total Salary	399,508	569,834	786,671	1,232,860	1,933,334	876,956	70,051	0	5,869,214
	Average Salary	30,731	43,833	60,513	58,708	62,366	62,640	70,051	0	55,370
50-54	Number	9	19	6	26	23	25	14	1	123
	Total Salary	366,263	808,740	216,909	1,269,958	1,230,241	1,454,191	730,058	37,389	6,113,749
	Average Salary	40,696	42,565	36,152	48,845	53,489	58,168	52,147	37,389	49,705
55-59	Number	11	18	7	27	20	13	5	7	108
	Total Salary	378,249	648,483	308,023	1,280,848	981,049	806,632	278,125	479,157	5,160,566
	Average Salary	34,386	36,027	44,003	47,439	49,052	62,049	55,625	68,451	47,783
60-64	Number	2	9	5	7	7	4	2	3	39
	Total Salary	42,148	482,509	203,139	349,708	391,817	242,787	122,377	164,656	1,999,141
	Average Salary	21,074	53,612	40,628	49,958	55,974	60,697	61,189	54,885	51,260
65-69	Number	1	5	1	1	3	2	0	0	13
	Total Salary	31,000	144,779	56,368	53,744	132,472	104,025	0	0	522,388
	Average Salary	31,000	28,956	56,368	53,744	44,157	52,013	0	0	40,184
70+	Number	2	1	0	0	1	0	0	0	4
	Total Salary	76,992	58,694	0	0	94,328	0	0	0	230,014
	Average Salary	38,496	58,694	0	0	94,328	0	0	0	57,504
TOTAL	Number	154	123	98	140	106	59	22	11	713
	Total Salary	5,533,158	5,305,947	5,184,745	7,359,698	5,944,896	3,576,111	1,200,611	681,202	34,786,368
	Average Salary	35,930	43,138	52,906	52,569	56,084	60,612	54,573	61,927	48,789

## Section 5.2 - Age and Service Distribution of Active Members as of December 31, 2016 (continued)

### General County

Attained Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	1	0	0	0	0	0	0	0	1
	Total Salary	23,853	0	0	0	0	0	0	0	23,853
	Average Salary	23,853	0	0	0	0	0	0	0	23,853
20-24	Number	10	1	0	0	0	0	0	0	11
	Total Salary	299,557	20,228	0	0	0	0	0	0	319,785
	Average Salary	29,956	20,228	0	0	0	0	0	0	29,071
25-29	Number	14	4	1	0	0	0	0	0	19
	Total Salary	460,207	125,312	33,927	0	0	0	0	0	619,446
	Average Salary	32,872	31,328	33,927	0	0	0	0	0	32,602
30-34	Number	4	5	4	0	0	0	0	0	13
	Total Salary	158,198	179,700	157,905	0	0	0	0	0	495,803
	Average Salary	39,550	35,940	39,476	0	0	0	0	0	38,139
35-39	Number	7	4	13	8	1	0	0	0	33
	Total Salary	250,896	143,716	691,156	343,235	42,992	0	0	0	1,471,995
	Average Salary	35,842	35,929	53,166	42,904	42,992	0	0	0	44,606
40-44	Number	10	7	8	10	4	0	0	0	39
	Total Salary	350,572	308,791	393,068	511,592	205,020	0	0	0	1,769,043
	Average Salary	35,057	44,113	49,134	51,159	51,255	0	0	0	45,360
45-49	Number	9	4	2	3	11	4	0	0	33
	Total Salary	277,424	149,932	145,814	160,297	616,954	202,823	0	0	1,553,244
	Average Salary	30,825	37,483	72,907	53,432	56,087	50,706	0	0	47,068
50-54	Number	3	6	5	10	6	8	8	1	47
	Total Salary	178,956	245,985	175,376	476,934	351,215	418,143	415,242	37,389	2,299,240
	Average Salary	59,652	40,998	35,075	47,693	58,536	52,268	51,905	37,389	48,920
55-59	Number	6	8	2	13	12	4	2	4	51
	Total Salary	158,929	264,855	71,981	540,870	528,376	347,730	121,340	230,519	2,264,600
	Average Salary	26,488	33,107	35,991	41,605	44,031	86,933	60,670	57,630	44,404
60-64	Number	1	3	3	4	4	2	2	1	20
	Total Salary	14,110	136,251	120,967	200,133	222,420	128,019	122,377	31,692	975,969
	Average Salary	14,110	45,417	40,322	50,033	55,605	64,010	61,189	31,692	48,798
65-69	Number	0	1	1	0	2	1	0	0	5
	Total Salary	0	14,110	56,368	0	75,823	45,724	0	0	192,025
	Average Salary	0	14,110	56,368	0	37,912	45,724	0	0	38,405
70+	Number	2	0	0	0	1	0	0	0	3
	Total Salary	76,992	0	0	0	94,328	0	0	0	171,320
	Average Salary	38,496	0	0	0	94,328	0	0	0	57,107
TOTAL	Number	67	43	39	48	41	19	12	6	275
	Total Salary	2,249,694	1,588,880	1,846,562	2,233,061	2,137,128	1,142,439	658,959	299,600	12,156,323
	Average Salary	33,578	36,951	47,348	46,522	52,125	60,128	54,913	49,933	44,205

## Section 5.2 - Age and Service Distribution of Active Members as of December 31, 2016 (continued)

### County Agency

Attained Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	1	0	0	0	0	0	0	0	1
	Total Salary	36,002	0	0	0	0	0	0	0	36,002
	Average Salary	36,002	0	0	0	0	0	0	0	36,002
20-24	Number	4	1	0	0	0	0	0	0	5
	Total Salary	134,526	42,660	0	0	0	0	0	0	177,186
	Average Salary	33,632	42,660	0	0	0	0	0	0	35,437
25-29	Number	1	2	0	0	0	0	0	0	3
	Total Salary	36,101	100,402	0	0	0	0	0	0	136,503
	Average Salary	36,101	50,201	0	0	0	0	0	0	45,501
30-34	Number	0	0	1	0	0	0	0	0	1
	Total Salary	0	0	46,055	0	0	0	0	0	46,055
	Average Salary	0	0	46,055	0	0	0	0	0	46,055
35-39	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
40-44	Number	2	1	0	3	0	1	0	0	7
	Total Salary	100,120	47,118	0	153,303	0	91,520	0	0	392,061
	Average Salary	50,060	47,118	0	51,101	0	91,520	0	0	56,009
45-49	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
50-54	Number	0	0	0	1	1	5	0	0	7
	Total Salary	0	0	0	47,148	52,254	263,217	0	0	362,619
	Average Salary	0	0	0	47,148	52,254	52,643	0	0	51,803
55-59	Number	0	0	0	1	2	1	1	0	5
	Total Salary	0	0	0	47,035	97,726	49,828	46,925	0	241,514
	Average Salary	0	0	0	47,035	48,863	49,828	46,925	0	48,303
60-64	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
65-69	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
70+	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
TOTAL	Number	8	4	1	5	3	7	1	0	29
	Total Salary	306,749	190,180	46,055	247,486	149,980	404,565	46,925	0	1,391,940
	Average Salary	38,344	47,545	46,055	49,497	49,993	57,795	46,925	0	47,998

## Section 5.2 - Age and Service Distribution of Active Members as of December 31, 2016 (continued)

### Sheriff's Office

Attained Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
20-24	Number	10	0	0	0	0	0	0	0	10
	Total Salary	429,166	0	0	0	0	0	0	0	429,166
	Average Salary	42,917	0	0	0	0	0	0	0	42,917
25-29	Number	8	1	0	0	0	0	0	0	9
	Total Salary	329,112	48,071	0	0	0	0	0	0	377,183
	Average Salary	41,139	48,071	0	0	0	0	0	0	41,909
30-34	Number	8	1	5	0	0	0	0	0	14
	Total Salary	368,288	50,561	322,914	0	0	0	0	0	741,763
	Average Salary	46,036	50,561	64,583	0	0	0	0	0	52,983
35-39	Number	4	5	11	9	0	0	0	0	29
	Total Salary	189,178	258,014	737,540	554,297	0	0	0	0	1,739,029
	Average Salary	47,295	51,603	67,049	61,589	0	0	0	0	59,967
40-44	Number	2	3	4	12	14	0	0	0	35
	Total Salary	71,247	146,053	251,322	817,695	835,120	0	0	0	2,121,437
	Average Salary	35,624	48,684	62,831	68,141	59,651	0	0	0	60,612
45-49	Number	0	1	1	9	11	6	1	0	29
	Total Salary	0	55,205	53,965	558,349	764,167	452,993	70,051	0	1,954,730
	Average Salary	0	55,205	53,965	62,039	69,470	75,499	70,051	0	67,404
50-54	Number	0	0	1	2	6	2	0	0	11
	Total Salary	0	0	41,534	108,761	337,818	169,498	0	0	657,611
	Average Salary	0	0	41,534	54,381	56,303	84,749	0	0	59,783
55-59	Number	0	0	0	1	2	1	0	0	4
	Total Salary	0	0	0	65,480	98,018	65,978	0	0	229,476
	Average Salary	0	0	0	65,480	49,009	65,978	0	0	57,369
60-64	Number	0	0	0	0	2	0	0	0	2
	Total Salary	0	0	0	0	140,838	0	0	0	140,838
	Average Salary	0	0	0	0	70,419	0	0	0	70,419
65-69	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
70+	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	Number	32	11	22	33	35	9	1	0	143
	Total Salary	1,386,991	557,904	1,407,275	2,104,582	2,175,961	688,469	70,051	0	8,391,233
	Average Salary	43,343	50,719	63,967	63,775	62,170	76,497	70,051	0	58,680

## Section 5.2 - Age and Service Distribution of Active Members as of December 31, 2016 (continued)

### County Library

Attained Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
20-24	Number	4	0	0	0	0	0	0	0	4
	Total Salary	107,989	0	0	0	0	0	0	0	107,989
	Average Salary	26,997	0	0	0	0	0	0	0	26,997
25-29	Number	4	1	0	0	0	0	0	0	5
	Total Salary	128,559	30,347	0	0	0	0	0	0	158,906
	Average Salary	32,140	30,347	0	0	0	0	0	0	31,781
30-34	Number	4	4	4	0	0	0	0	0	12
	Total Salary	124,532	188,899	181,750	0	0	0	0	0	495,181
	Average Salary	31,133	47,225	45,438	0	0	0	0	0	41,265
35-39	Number	2	2	3	0	0	0	0	0	7
	Total Salary	64,854	87,743	158,458	0	0	0	0	0	311,055
	Average Salary	32,427	43,872	52,819	0	0	0	0	0	44,436
40-44	Number	1	1	1	0	0	0	0	0	3
	Total Salary	32,718	36,192	53,358	0	0	0	0	0	122,268
	Average Salary	32,718	36,192	53,358	0	0	0	0	0	40,756
45-49	Number	2	3	3	2	1	0	0	0	11
	Total Salary	59,675	112,829	120,969	117,071	63,117	0	0	0	473,661
	Average Salary	29,838	37,610	40,323	58,536	63,117	0	0	0	43,060
50-54	Number	5	9	0	3	1	2	1	0	21
	Total Salary	154,830	286,776	0	148,032	37,682	107,935	47,875	0	783,130
	Average Salary	30,966	31,864	0	49,344	37,682	53,968	47,875	0	37,292
55-59	Number	2	8	2	5	1	1	1	3	23
	Total Salary	69,085	257,596	65,840	226,733	60,258	46,233	45,557	248,638	1,019,940
	Average Salary	34,543	32,200	32,920	45,347	60,258	46,233	45,557	82,879	44,345
60-64	Number	1	5	1	2	0	0	0	2	11
	Total Salary	28,038	170,160	37,441	100,314	0	0	0	132,964	468,917
	Average Salary	28,038	34,032	37,441	50,157	0	0	0	66,482	42,629
65-69	Number	1	4	0	0	1	1	0	0	7
	Total Salary	31,000	130,669	0	0	56,649	58,301	0	0	276,619
	Average Salary	31,000	32,667	0	0	56,649	58,301	0	0	39,517
70+	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
TOTAL	Number	26	37	14	12	4	4	2	5	104
	Total Salary	801,280	1,301,211	617,816	592,150	217,706	212,469	93,432	381,602	4,217,666
	Average Salary	30,818	35,168	44,130	49,346	54,427	53,117	46,716	76,320	40,554



## Section 5.2 - Age and Service Distribution of Active Members as of December 31, 2016 (continued)

### Road Commission

Attained Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
20-24	Number	5	0	0	0	0	0	0	0	5
	Total Salary	198,042	0	0	0	0	0	0	0	198,042
	Average Salary	39,608	0	0	0	0	0	0	0	39,608
25-29	Number	2	0	0	0	0	0	0	0	2
	Total Salary	43,272	0	0	0	0	0	0	0	43,272
	Average Salary	21,636	0	0	0	0	0	0	0	21,636
30-34	Number	0	0	1	0	0	0	0	0	1
	Total Salary	0	0	48,407	0	0	0	0	0	48,407
	Average Salary	0	0	48,407	0	0	0	0	0	48,407
35-39	Number	0	0	2	2	0	0	0	0	4
	Total Salary	0	0	106,718	114,955	0	0	0	0	221,673
	Average Salary	0	0	53,359	57,478	0	0	0	0	55,418
40-44	Number	1	1	2	6	2	0	0	0	12
	Total Salary	44,013	78,000	97,838	336,826	98,522	0	0	0	655,199
	Average Salary	44,013	78,000	48,919	56,138	49,261	0	0	0	54,600
45-49	Number	0	1	2	2	5	2	0	0	12
	Total Salary	0	46,942	131,776	100,248	288,559	111,053	0	0	678,578
	Average Salary	0	46,942	65,888	50,124	57,712	55,527	0	0	56,548
50-54	Number	1	0	0	7	9	4	4	0	25
	Total Salary	32,477	0	0	342,273	451,272	226,153	220,869	0	1,273,044
	Average Salary	32,477	0	0	48,896	50,141	56,538	55,217	0	50,922
55-59	Number	2	0	2	7	2	1	0	0	14
	Total Salary	106,235	0	122,573	400,730	143,213	53,553	0	0	826,304
	Average Salary	53,118	0	61,287	57,247	71,607	53,553	0	0	59,022
60-64	Number	0	0	1	1	0	0	0	0	2
	Total Salary	0	0	44,731	49,262	0	0	0	0	93,993
	Average Salary	0	0	44,731	49,262	0	0	0	0	46,997
65-69	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
70+	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
TOTAL	Number	11	2	10	25	18	7	4	0	77
	Total Salary	424,039	124,942	552,043	1,344,294	981,566	390,759	220,869	0	4,038,512
	Average Salary	38,549	62,471	55,204	53,772	54,531	55,823	55,217	0	52,448

## Section 5.2 - Age and Service Distribution of Active Members as of December 31, 2016 (continued)

### Mental Health

Attained Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
20-24	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
25-29	Number	0	1	0	0	0	0	0	0	1
	Total Salary	0	48,264	0	0	0	0	0	0	48,264
	Average Salary	0	48,264	0	0	0	0	0	0	48,264
30-34	Number	0	4	1	0	0	0	0	0	5
	Total Salary	0	200,352	46,587	0	0	0	0	0	246,939
	Average Salary	0	50,088	46,587	0	0	0	0	0	49,388
35-39	Number	0	3	1	2	0	0	0	0	6
	Total Salary	0	163,558	42,125	72,561	0	0	0	0	278,244
	Average Salary	0	54,519	42,125	36,281	0	0	0	0	46,374
40-44	Number	0	2	2	3	0	0	0	0	7
	Total Salary	0	109,365	129,940	98,166	0	0	0	0	337,471
	Average Salary	0	54,683	64,970	32,722	0	0	0	0	48,210
45-49	Number	1	3	4	4	2	2	0	0	16
	Total Salary	25,272	153,249	283,669	246,801	147,287	110,088	0	0	966,366
	Average Salary	25,272	51,083	70,917	61,700	73,644	55,044	0	0	60,398
50-54	Number	0	4	0	3	0	4	1	0	12
	Total Salary	0	275,979	0	146,809	0	269,244	46,072	0	738,104
	Average Salary	0	68,995	0	48,936	0	67,311	46,072	0	61,509
55-59	Number	1	2	1	0	0	5	1	0	10
	Total Salary	44,000	126,031	47,630	0	0	243,310	64,304	0	525,275
	Average Salary	44,000	63,016	47,630	0	0	48,662	64,304	0	52,528
60-64	Number	0	1	0	0	1	2	0	0	4
	Total Salary	0	176,098	0	0	28,560	114,768	0	0	319,426
	Average Salary	0	176,098	0	0	28,560	57,384	0	0	79,857
65-69	Number	0	0	0	1	0	0	0	0	1
	Total Salary	0	0	0	53,744	0	0	0	0	53,744
	Average Salary	0	0	0	53,744	0	0	0	0	53,744
70+	Number	0	1	0	0	0	0	0	0	1
	Total Salary	0	58,694	0	0	0	0	0	0	58,694
	Average Salary	0	58,694	0	0	0	0	0	0	58,694
TOTAL	Number	2	21	9	13	3	13	2	0	63
	Total Salary	69,272	1,311,590	549,951	618,081	175,847	737,410	110,376	0	3,572,527
	Average Salary	34,636	62,457	61,106	47,545	58,616	56,724	55,188	0	56,707

## Section 5.2 - Age and Service Distribution of Active Members as of December 31, 2016 (continued)

### Central Dispatch

Attained Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
20-24	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
25-29	Number	1	1	0	0	0	0	0	0	2
	Total Salary	37,709	44,670	0	0	0	0	0	0	82,379
	Average Salary	37,709	44,670	0	0	0	0	0	0	41,190
30-34	Number	4	1	0	0	0	0	0	0	5
	Total Salary	153,055	42,475	0	0	0	0	0	0	195,530
	Average Salary	38,264	42,475	0	0	0	0	0	0	39,106
35-39	Number	2	1	2	0	0	0	0	0	5
	Total Salary	67,231	44,956	114,567	0	0	0	0	0	226,754
	Average Salary	33,616	44,956	57,284	0	0	0	0	0	45,351
40-44	Number	0	1	0	3	0	0	0	0	4
	Total Salary	0	47,459	0	169,949	0	0	0	0	217,408
	Average Salary	0	47,459	0	56,650	0	0	0	0	54,352
45-49	Number	1	1	1	1	1	0	0	0	5
	Total Salary	37,137	51,678	50,479	50,095	53,251	0	0	0	242,640
	Average Salary	37,137	51,678	50,479	50,095	53,251	0	0	0	48,528
50-54	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
55-59	Number	0	0	0	0	1	0	0	0	1
	Total Salary	0	0	0	0	53,458	0	0	0	53,458
	Average Salary	0	0	0	0	53,458	0	0	0	53,458
60-64	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
65-69	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
70+	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
TOTAL	Number	8	5	3	4	2	0	0	0	22
	Total Salary	295,132	231,238	165,046	220,044	106,709	0	0	0	1,018,169
	Average Salary	36,892	46,248	55,015	55,011	53,355	0	0	0	46,280

## Section 5.3 - Member Data Reconciliation

	Inactive Members					Total
	Active Members	With Deferred Benefits	Retired Members	Disabled Members	Beneficiaries	
As of December 31, 2015	717	150	656	61	19	1,603
Age/Service Retirements	(14)	(15)	29			0
Disability Retirements	(2)			2		0
Deaths Without Beneficiary			(13)	(2)		(15)
Deaths With Beneficiary		1	(5)	(1)	7	2
Non-vested Terminations	(6)					(6)
Vested Terminations	(14)	14				0
Rehires						0
Cash-outs	(9)					(9)
Expiration of Benefits					(1)	(1)
Data Corrections <sup>1</sup>			(47)	(10)	57	0
Transfers Out						0
Laid Off						0
Pick Ups		1				1
Net Change	(45)	1	(36)	(11)	63	(28)
New Entrants During the Year	41					41
As of December 31, 2016	713	151	620	50	82	1,616

<sup>1</sup> The status for 57 individuals was changed from retired or disabled to beneficiary.

## Section 5.4 - Schedule of Active Member Data

Valuation Date	Number								Annual Earnings	Annual Average Earnings	Percent Increase/ (Decrease) in Average Earnings
	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Total			
December 31, 2009	339	34	172	119	91	137	20	912	42,893,801	47,033	2.2%
December 31, 2010	297	25	141	123	85	129	18	818	38,418,135	46,966	-0.1%
December 31, 2011	298	25	141	116	83	131	19	813	38,891,988	47,838	1.9%
December 31, 2012	289	27	140	113	74	108	20	771	37,587,747	48,752	1.9%
December 31, 2013	287	24	136	122	72	89	21	751	36,065,439	48,023	-1.5%
December 31, 2014	278	25	143	98	73	75	21	713	34,911,801	48,965	2.0%
December 31, 2015	280	28	145	102	74	67	21	717	35,914,410	50,090	2.3%
December 31, 2016	275	29	143	104	77	63	22	713	34,786,368	48,789	-2.6%

## Section 5.5 - Schedule of Inactive Member Data

Valuation Date								Number	Annual Benefit Payments	Average Annual Benefit Payments
	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch			
December 31, 2008								142	1,458,854	10,274
December 31, 2009								136	1,410,694	10,373
December 31, 2010								138	1,453,761	10,535
December 31, 2011								125	1,355,821	10,847
December 31, 2012								135	1,521,470	11,270
December 31, 2013	59	0	10	8	8	52	0	137	1,634,172	11,928
December 31, 2014	58	0	11	9	8	56	0	142	1,704,282	12,002
December 31, 2015	62	1	10	8	9	59	1	150	1,883,411	12,556
December 31, 2016	60	4	11	7	10	58	1	151	1,970,828	13,052

## Section 5.6 - Schedule of Retired Members by Type of Benefit and Option Elected

Amount of Monthly Pension Benefit	Number of Recipients	Type of Pension Benefit			Option Selected					
		1	2	3	1	3	4	5	6	
\$ 1 – \$ 300	34	24	10	0	14	2	8	0	10	
301 – 600	90	65	19	6	49	4	9	9	19	
601 – 900	91	65	17	9	49	3	9	13	17	
901 – 1,200	93	66	15	12	44	5	18	11	15	
1,201 – 1,500	78	64	7	7	46	5	9	11	7	
1,501 – 1,800	72	64	5	3	33	3	12	19	5	
1,801 – 2,100	74	63	3	8	41	2	10	18	3	
2,101 – 2,400	56	51	3	2	22	6	10	15	3	
2,401 – 2,700	42	38	2	2	19	2	4	15	2	
2,701 – 3,000	30	29	1	0	11	3	5	10	1	
3,001 – 3,300	18	18	0	0	9	0	2	7	0	
3,301 – 3,600	23	22	0	1	6	2	2	13	0	
3,601 – 3,900	16	16	0	0	8	1	0	7	0	
3,901 – 4,200	18	18	0	0	7	0	3	8	0	
Over \$4,200	17	17	0	0	8	0	3	6	0	
<b>Totals</b>	<b>752</b>	<b>620</b>	<b>82</b>	<b>50</b>	<b>366</b>	<b>38</b>	<b>104</b>	<b>162</b>	<b>82</b>	

**Type of Pension Benefit**

1. Regular retirement
2. Survivor payment
3. Disability

**Option Elected**

- 1 = Straight Life
- 3 = Years Certain
- 4 = Joint and 100% Survivor
- 5 = Joint and 50% Survivor
- 6 = Survivor of a Retirant

## Section 5.7 - Schedule of Retired Members and Beneficiaries

As of December 31	2016	2015	2014
<b>Age and Service</b>			
(1) Number, Fiscal Year Start	656	647	631
(2) Net Change	(36) <sup>1</sup>	9	16
(3) Number, Fiscal Year End	620	656	647
(4) Average Current Age	69.0	69.1	68.7
(5) Average Monthly Pension Benefit	1,784	1,729	1,694
<b>Surviving Spouse's Benefits</b>			
(1) Number, Fiscal Year Start	19	11	11
(2) Net Change	63 <sup>1</sup>	8	0
(3) Number, Fiscal Year End	82	19	11
(4) Average Current Age	73.7	70.0	66.3
(5) Average Monthly Pension Benefit	942	1,046	1,120
<b>Disabilities</b>			
(1) Number, Fiscal Year Start	61	61	58
(2) Net Change	(11) <sup>1</sup>	0	3
(3) Number, Fiscal Year End	50	61	61
(4) Average Current Age	60.9	61.8	61.2
(5) Average Monthly Pension Benefit	1,302	1,147	1,126
<b>Total</b>			
(1) Number, Fiscal Year Start	736	719	700
(2) Net Change	16	17	19
(3) Number, Fiscal Year End	752	736	719
(4) Average Current Age	69.0	68.6	68.0
(5) Average Monthly Pension Benefit	1,660	1,663	1,615

<sup>1</sup> The status for 47 retirees and 10 disabled participants was changed to beneficiary.



## Section 5.8 - Retirees Added to and Removed from Rolls

Year Ended	Added to Rolls		Removed from Rolls		Rolls – End of Year		Percent Increase in Annual Pension Allowances	Average Annual Pension Allowance
	No.	Annual Pension Allowances	No.	Annual Pension Allowances	No.	Annual Pension Allowances		
December 31, 2007	51	772,282	18	147,009	497	7,651,774	8.9%	15,396
December 31, 2008	20	390,306	12	122,465	505	7,919,615	3.5%	15,682
December 31, 2009	76	1,691,456	25	289,107	556	9,321,964	17.7%	16,766
December 31, 2010	106	2,903,205	17	150,288	645	12,074,881	29.5%	18,721
December 31, 2011	40	828,299	19	279,510	666	12,623,670	4.5%	18,954
December 31, 2012	38	593,734	31	358,826	673	12,858,578	1.9%	19,106
December 31, 2013	44	919,563	17	209,449	700	13,568,692	5.5%	19,384
December 31, 2014	33	718,532	14	66,374	719	14,120,850	4.8%	19,640
December 31, 2015	32	760,535	15	196,320	736	14,685,065	4.0%	19,953
December 31, 2016	38	642,654	22	348,793	752	14,978,926	2.0%	19,919

## Section 5.9 - Schedule of Benefit Payments

Attained Ages	Regular retirement & Survivor payment		Disability		Total	
	Annual		Annual		Annual	
	No.	Allowances	No.	Allowances	No.	Allowances
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	1	7,196	0	0	1	7,196
45-49	0	0	0	0	0	0
50-54	1	13,230	1	14,955	2	28,185
55-59	18	745,137	16	291,330	34	1,036,467
60-64	56	1,787,603	8	149,974	64	1,937,577
65-69	156	3,539,288	9	151,155	165	3,690,443
70-74	190	3,810,070	9	105,534	199	3,915,604
75	109	1,980,070	3	32,031	112	2,012,101
76	17	252,775	0	0	17	252,775
77	17	288,714	0	0	17	288,714
78	14	273,835	3	28,285	17	302,120
79	11	180,694	1	7,845	12	188,539
80	13	212,488	0	0	13	212,488
81	14	95,178	0	0	14	95,178
82	6	77,496	0	0	6	77,496
83	14	163,384	0	0	14	163,384
84	4	52,285	0	0	4	52,285
85	12	167,520	0	0	12	167,520
86	8	132,591	0	0	8	132,591
87	8	123,635	0	0	8	123,635
88	3	55,008	0	0	3	55,008
89	9	94,338	0	0	9	94,338
90	2	4,677	0	0	2	4,677
91	4	43,132	0	0	4	43,132
92	4	18,559	0	0	4	18,559
93	2	8,213	0	0	2	8,213
94	1	21,468	0	0	1	21,468
95	1	5,702	0	0	1	5,702
96	4	28,858	0	0	4	28,858
97	3	14,673	0	0	3	14,673
98	0	0	0	0	0	0
99	0	0	0	0	0	0
100	0	0	0	0	0	0
101	0	0	0	0	0	0
102	0	0	0	0	0	0
103	0	0	0	0	0	0
<b>Total</b>	<b>702</b>	<b>14,197,817</b>	<b>50</b>	<b>781,109</b>	<b>752</b>	<b>14,978,926</b>

## Section 5.9 - Schedule of Benefit Payments (continued)

<b>Inactive Members</b>		
Attained		Estimated
Ages	No.	Annual
<u>          </u>	<u>          </u>	<u>Allowances</u>
Under 30	1	11,178
30	0	0
31	0	0
32	0	0
33	3	29,246
34	0	0
35	1	10,917
36	3	27,862
37	2	16,857
38	3	37,418
39	6	75,316
40	4	73,333
41	4	99,545
42	3	27,362
43	6	56,386
44	8	118,345
45	5	60,975
46	5	74,501
47	2	61,503
48	8	89,544
49	7	123,445
50	6	52,962
51	7	43,874
52	7	83,600
53	7	107,011
54	12	158,253
55	11	114,146
56	5	86,215
57	7	82,490
58	7	72,052
59	8	122,832
60	1	40,490
61	0	0
62	1	2,892
63	0	0
64	1	10,278
65	0	0
66	0	0
67	0	0
68	0	0
<b>Total</b>	<b>151</b>	<b>1,970,828</b>

**Section 6: Basis of the Actuarial Valuation**

## Section 6.1 – Brief Summary of Benefit Provisions

Eligibility	Amount
<p><b>Regular Retirement</b>  <b>General, Library, Road Commission, Mental Health, Sheriff's Office and Central Dispatch.</b></p>	<p>See Section 6.2 for details.            Highest 3 consecutive years out of last 10 for all groups.            Maximum Benefit: 75% of final average earnings</p>
<p><b>Deferred Retirement</b>            8 or more years of service</p>	<p>Computed as a regular retirement but based upon service and final average earnings at termination date.</p>
<p><b>Non-Duty Death-In-Service</b>            15 years of service or age 60 with 10 years of service.</p>	<p>Computed as a regular retirement but actuarially reduced in accordance with a 100% joint and survivor election.</p>
<p><b>Duty Death-In-Service</b>            No age or service requirements</p>	<p>Computed as regular retirement but computed as if the member had at least 15 years of service. Must be in receipt of worker's compensation.</p>
<p><b>Non-Duty Disability</b>            10 or more years of service</p>	<p>Computed as a regular retirement.</p>
<p><b>Duty Disability</b>            No age or service requirements.</p>	<p>Computed as a regular retirement benefit but computed as if the member had at least 10 years of service.</p>
<p><b>Post-Retirement Increases</b>            Automatic Cost of Living Adjustment: None            13<sup>th</sup> Check: Please see Section 6.3</p>	
<p><b>Member Contributions</b>            Please see Section 6.2 for summary description. See Plan document for details.</p>	

## Section 6.2 - Summary of Plan Provisions by Division

### Monroe County Employees Retirement System Summary of Plan Provisions by Division

Valuation Group	Union Name	Numeric Code	Tier 1				Tier 2				
			Benefit Multiplier	FAC	EE Contribution	Normal Retirement Eligibility	Effective Date	Benefit Multiplier	FAC	EE Contribution	Normal Retirement Eligibility
General	Non-Union Other	0	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	Michigan Nurses Association	3	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	TPOAM General	4	2.50%	3 yr.	3.00%	55/30 or 60/8	10/26/2010	1.50%	3 yr.	3.00%	60/8
General	UAW/Friend of the Court	6	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	TPOAM District Court	26	2.50%	3 yr.	3.00%	55/30 or 60/8	10/26/2010	1.50%	3 yr.	3.00%	60/8
General	POAM/District Court Unit I	7	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	POAM/District Court Unit II	27	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	TPOAM Youth Center	8	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	TPOAM Youth Center Supervisors	28	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	United Steelworkers/Youth Center	29	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	TPOAM Family Court	11	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	POAM/Assistant Prosecutor's	14	2.50%	3 yr.	3.00%	55/30 or 60/8	4/3/2012	1.50%	3 yr.	3.00%	60/8
General	Non-Union Management	20	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	Elected Officials - Non-Union	22	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	County (Non-Union) Part-time	25	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
Sheriff	POAM/Sheriff Deputies	1	2.50%	3 yr.	3.00%	50/25 or 60/8	7/1/2013	1.50%	3 yr.	3.00%	50/25 or 60/8
Sheriff	COAM/Command Officers	9	2.75%	3 yr.	4.53%	50/25 or 60/8	4/25/2013	Retirement Benefits provided in previous position (Deputies Unit)			
Sheriff	POAM/Correctional Officers Unit I	10	2.50%	3 yr.	3.00%	50/25 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	50/25 or 60/8
Sheriff	COAM/Correctional Officers Unit II	17	2.50%	3 yr.	3.00%	50/25 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	50/25 or 60/8
Sheriff	Non-Union Command	30	2.75%	3 yr.	4.53%	50/25 or 60/8	4/25/2013	Retirement Benefits provided in previous position (Deputies Unit)			

Valuation Group	Union Name	Numeric Code	Tier 1				Tier 2				
			Benefit Multiplier	FAC	EE Contribution	Normal Retirement Eligibility	Effective Date	Benefit Multiplier	FAC	EE Contribution	Normal Retirement Eligibility
Dispatchers	POLC/Communication Officers	50	2.50%	3 yr.	3.00%	50/25 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
Dispatchers	COAM/Communication Supervisors	16	2.50%	3 yr.	3% to \$7,800 plus 5% over	50/25 or 60/8	1/1/2011	1.50%	3 yr.	3% to \$7,800 plus 5% over	60/8
Dispatchers	POLC/Communication Spec	12	2.50%	3 yr.	3.00%	50/25 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
Mental Health	AFSCME Mental Health	5	2.25%	3 yr.	0.00%	55/30 or 60/8	6/1/2012	None			
Mental Health	Non-Union Mental Health	23	2.25%	3 yr.	0.00%	55/30 or 60/8	6/1/2012	None			
Mental Health	Mental Health Management	24	2.25%	3 yr.	0.00%	55/30 or 60/8	6/1/2012	None			
Road Commission	Local 543 Utility Workers Union of America	44	2.25%	3 yr.	3.25%	55/30 or 60/8					
Road Commission	AFSCME Local 839, Unit I	45	2.25%	3 yr.	3.25%	55/30 or 60/8					
Road Commission	Road Commission - Management	46	2.25%	3 yr.	3.25%	55/30 or 60/8					
Road Commission	AFSCME and Local 543	48	2.00%	3 yr.	3.25%	55/30 or 60/8	12/1/2014	2.00%	3 yr.	3.25%	55/30 or 60/8
Library	Library (Non-Union)	73	2.00%	3 yr.	0.00%	55/30 or 60/8					
Library	Library (Non-Union) Part-Time	74	2.00%	3 yr.	0.00%	55/30 or 60/8					
County Agency	AFLCIO/County Agency	2	2.50%	3 yr.	3.00%	55/30 or 60/8	12/1/2014	1.50%	3 yr.	3.00%	60/8
County Agency	Non-Union/County Agency	15	2.50%	3 yr.	0.00%	55/30 or 60/8					

## Section 6.3 - Summary of the 13th Check Provisions by Division

Division	General County	County Agency	Sheriff's Office	County Library	Road Commission *	Mental Health	Central Dispatch
Source of the 13th check payments	Employer	Employer	Employer	Employer	Employer	N/A	Employer
13th check Excess Reserve fund	Closed	Closed	Closed	N/A	Closed	N/A	Closed
Amount of payout for 2016	\$50,000	\$0	\$0	\$38,021	\$50,000	N/A	\$0

\*The Road Commission Excess Earnings Reserve Fund is no longer in existence and the Road Commission is now using general funds to fund the distribution of these benefits. Under Policy No. 2016-04, \$50,000 is to be taken each year from the general funds to fund the Post-Retirement Supplemental Benefits Distribution Program and evenly distributed to all Monroe County Road Commission retirees, regardless of the year they retired, their age, or how long they have been retired.



## Section 6.4 - Description of Actuarial Methods and Valuation Procedures

### Actuarial Cost Method

Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an individual entry-age actuarial cost method having the following characteristics:

- i) the annual normal costs for each individual active member, payable from the hire date to the date of retirement, are sufficient to accumulate to the value of the member's benefit earned.
- ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

### Asset Valuation Method

Last year's valuation assets are increased by contributions and regular investment income and reduced by refunds, benefit payments and expenses. The difference between the actual investment return and the expected return is phased-in over a 7-year period. The result must be no more than 30% from the market value of assets for the December 31, 2008 valuation. The percentage that the valuation assets can differ from the market value of assets will decrease each subsequent year by 2% until a 20% corridor is reached. In the December 31, 2016 valuation the corridor is 20%.

### Financing of Unfunded Actuarial Accrued Liabilities

Unfunded actuarial accrued liabilities are amortized over a 25-year layered amortization with 2% annual payment increases.

### Actuarial Assumptions Used for the Valuation

The following assumptions were selected by the plan's actuary and adopted by the Board at its September 21, 2015 meeting. The assumptions are based on an experience study covering the years ending 2009 through 2014.

### Investment Return

(net of investment expenses).

7% rate of return for Funding (inflation assumption of 3% is first used for the December 31, 2014 valuation).

This rate of return assumption is used to equate the value of payments due at different points in time and was first used for the December 31, 2002 valuation and re-evaluated for the December 31, 2015 valuation.

## Section 6.4 - Description of Actuarial Methods and Valuation Procedures (continued)

### Salary Increases

These assumptions are used to project current pay to those upon which benefits will be based. These assumptions were first used for the December 31, 2014 valuation.

Annual Rate of Salary Increases by Member's Years of Service							
Years of Service	Base (Economic)	Merit and Longevity			Total		
		General, Library, County Agency, Sheriff's Office, Central Dispatch	Road Commission	Mental Health	General, Library, County Agency, Sheriff's Office, Central Dispatch	Road Commission	Mental Health
1	3.00%	2.50%	2.00%	2.00%	5.50%	5.00%	5.00%
2	3.00%	2.50%	2.00%	2.00%	5.50%	5.00%	5.00%
3	3.00%	2.50%	2.00%	2.00%	5.50%	5.00%	5.00%
4	3.00%	2.50%	2.00%	2.00%	5.50%	5.00%	5.00%
5	3.00%	2.50%	1.50%	2.00%	5.50%	4.50%	5.00%
6	3.00%	2.50%	1.50%	2.00%	5.50%	4.50%	5.00%
7	3.00%	2.50%	1.50%	1.50%	5.50%	4.50%	4.50%
8	3.00%	2.50%	1.50%	1.50%	5.50%	4.50%	4.50%
9+	3.00%	.50%	.50%	.50%	3.50%	3.50%	3.50%

### Mortality

The Fully Generational RP-2014 Blue Collar Mortality Table for males and females, using Projection Scale MP-2014.

This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each pension payment being made after retirement. For disability retirements, the Fully Generational RP-2014 Disabled Retiree Mortality Table for males and females, using Projection Scale MP-2014 was used.

It is assumed that all deaths are non-duty related deaths. These assumptions were first used for the December 31, 2014 valuation.

## Section 6.4 - Description of Actuarial Methods and Valuation Procedures (continued)

### Rates of Retirement

These assumptions are used to measure the probabilities of an eligible member retiring during the year. These assumptions were first used for the December 31, 2014 valuation.

Retirement Ages	Percent of Active Members Retiring within Next Year		
	General County, County Agency, Mental Health, and County Library	Sheriff's Office and County Dispatch	Road Commission
50		23.50%	
51		23.50%	
52		23.50%	
53		31.25%	
54		31.25%	
55	37.50%	31.25%	12.50%
56	12.50%	31.25%	12.50%
57	12.50%	15.63%	25.00%
58	12.50%	7.88%	25.00%
59	12.50%	7.88%	25.00%
60	20.00%	7.88%	50.00%
61	20.00%	7.88%	50.00%
62	20.00%	7.88%	50.00%
63	25.00%	7.88%	50.00%
64	25.00%	7.88%	50.00%
65	25.00%	100.00%	100.00%
66	30.00%		
67	30.00%		
68	30.00%		
69	30.00%		
70	100.00%		

### Administrative Expenses

0.5% of payroll.

### Active Member Group Size

The number of active members was assumed to remain constant, except Mental Health which is closed to new hires.

### Rates of separation from active membership

(Rates do not apply to members eligible for regular retirement and do not include separation on account of death or disability.) This assumption measures the probabilities of members remaining in employment. These assumptions were first used for the December 31, 2014 valuation.

## Section 6.4 - Description of Actuarial Methods and Valuation Procedures (continued)

### Rates of Separation from Active Employment before Retirement, Death or Disability

Member Ages	Years of Service	Percent of Active Members Separating During the Year		
		General County, County Agency, Mental Health and County Library	Sheriff's Office & Central Dispatch	Road Commission
ALL	0	2.00%	22.50%	15.00%
	1	13.00%	13.50%	12.00%
	2	12.00%	10.50%	10.50%
	3	10.00%	10.50%	9.00%
	4	8.00%	10.50%	9.00%
25	5 & Over	6.12%	3.00%	6.00%
30		6.12%	3.00%	3.00%
35		5.44%	2.00%	3.00%
40		5.10%	2.00%	3.00%
45		3.40%	1.75%	2.00%
50		3.40%	1.00%	2.00%
55		0.85%	0.50%	1.00%
60		0.85%	0.00%	1.00%

### Rates of Disability

These rates represent the probabilities of active members becoming disabled. These assumptions were first used for the December 31, 2014 valuation. Sample disability rates are as follows:

Member Ages	Number of Disabilities	
	Men	Women
20	0.1170%	0.1020%
25	0.1170%	0.1020%
30	0.1170%	0.1020%
35	0.1170%	0.1020%
40	0.3015%	0.6560%
45	0.3975%	0.4050%
50	0.7380%	0.5970%
55	1.3395%	0.7660%
60	2.1210%	1.0170%

85% of the disabilities were assumed to be non-duty related. For the Sheriff's Office and Road Commission employees, 50% of the disabilities are assumed to be duty related.

## Section 6.4 - Description of Actuarial Methods and Valuation Procedures (continued)

### Miscellaneous and Technical Assumptions

#### Marriage Assumption

100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.

#### Pay Increase Timing

On the valuation date.

#### Decrement Timing

Decrements of all types are assumed to occur mid-year.

#### Eligibility Testing

Eligibility for benefits is determined using the age nearest birthday and the service nearest whole year on the anniversary of the valuation date.

#### Benefit Service

Exact fractional service is used to determine the amount of benefit payable.

#### Decrement Relativity

Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

#### Normal Form of Benefit

The assumed normal form of benefit is straight life form.

#### Loads

None.

## Glossary

### **Actuarial Accrued Liability**

Total accumulated cost to fund pension benefits arising from service in all prior years.

### **Actuarial Cost Method**

Technique used to assign or allocate, in a systematic and consistent manner, the expected cost of a pension plan for a group of plan members to the years of service that give rise to that cost.

### **Actuarial Present Value of Future Benefits**

Amount which, together with future interest, is expected to be sufficient to pay all future benefits.

### **Actuarial Valuation**

Study of probable amounts of future pension benefits and the necessary amount of contributions to fund those benefits.

### **Actuary**

Person who performs mathematical calculations pertaining to pension and insurance benefits based on specific procedures and assumptions.

### **GASB 67**

Governmental Accounting Standards Board Statement Number 67.

### **Maturity Ratio**

The ratio of the actuarial accrued liability for members who are no longer active to the total actuarial accrued liability. A ratio of over 50% indicates a mature plan. The higher the maturity ratio, the more volatile the contribution rate will be from year to year given actuarial gains and losses.

### **Normal Cost**

That portion of the actuarial present value of benefits assigned to a particular year in respect to an individual participant or the plan as a whole.

### **Unfunded Actuarial Accrued Liability (UAAL)**

The portion of the actuarial accrued liability not offset by plan assets.